

REPORT OF THE GOVERNOR'S SOLID WASTE TASK FORCE

Pursuant to Executive Order 99-6
July, 2001



STATE OF NEW HAMPSHIRE

July 16, 2001

Her Excellency, Governor Jeanne Shaheen
State House
Concord, NH 03301

Subject: Transmission of the Report of the Governor's Solid Waste Task Force

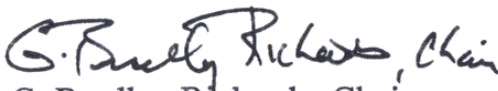
Dear Governor Shaheen,

On behalf of the Solid Waste Task Force, I am pleased to submit our report. This document is the culmination of two years work by 27 dedicated citizens representing a variety of backgrounds and interests throughout the State. Sometimes our diversity made achieving consensus difficult, but for the most part, it added to the quality and depth of the discussion on matters of importance to all members.

In concert with your Executive Order (99-6), the Task Force analyzed and reported on three main issues: solid waste disposal options; importation of solid waste; and cost increases in solid waste management. The report contains a list of findings and recommendations based upon the Task Force analysis.

Thank you for the opportunity to chair this Task Force. I look forward to any response that you may have to the report and invite you or your staff to contact me with any questions.

Sincerely,


G. Bradley Richards, Chair
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Governor Jeanne Shaheen

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I. Introduction

During the last five years, the solid waste industry has undergone change both nationally and regionally. The trend towards industry concentration and regionalization of solid waste disposal has accelerated. At the same time, communities have, with varying degrees of success, increased their recycling rates, encouraged re-use through swap programs and dealt with a myriad of other issues, including the closure of their unlined municipal landfills. During this period, a strong national and regional economy has driven increased waste generation.

By the mid 1990s, it was clear that events were proceeding in such a manner that New Hampshire municipalities and businesses that depend upon the waste industry were on a path toward fewer final disposal facilities, higher costs of disposal, greater industry concentration and an increasing amount of out-of-state waste coming to New Hampshire. In addition, New Hampshire's diversion rate (27-30%), which includes source reduction, reuse, recycling and composting, was below the Legislature's goal of 40% by the year 2000.

In its Annual Report to the Governor for 1998, the Waste Management Council¹ stated its concern that “...the apparent concentration of limited disposal sites and the concentration of ownership is creating a potential monopoly which is detrimental to New Hampshire municipalities and not in the public's interest.”

The Governor discussed the Council Report with New Hampshire Department of Environmental Services (Department) Commissioner Robert W. Varney and an outgrowth of that discussion was Governor Shaheen's Executive Order 99-6 which created the 27 member Solid Waste Task Force. The Task Force was charged with investigating a range of issues in order to assist the Department of Environmental Services and the New Hampshire Department of Justice in a review of changes in the solid waste industry.

This report will document the matters of concern mentioned above, some of which continue to change and have, in some cases, improved. In the Fall of 1999, imports were reducing disposal capacity; industry concentration was arguably creating a competitive disadvantage for independent haulers; and tipping fees were increasing. Approximately one year later, imports have been substantially reduced; disposal capacity through 2010 is adequate at current rates of disposal; tipping fees have either remained constant or, in some cases, increased; and two companies continue to control the bulk of final disposal capacity.

This Task Force Report first includes an analysis of current issues in the regional solid waste industry, and then presents findings and recommendations which are intended to reduce demand for disposal capacity and lower disposal costs by: (1) increasing recycling and waste diversion;

¹ The Waste Management Council created under RSA 21-O:9 is a 13 member entity charged with: consulting with and advising the director of the division of waste management with respect to policy, programs, goals and operations of the division; hearing and deciding all appeals from department decisions relative to solid waste management; and reviewing all proposed rules regarding solid waste management prior to filing.

(2) increasing disposal capacity for New Hampshire generated trash; and (3) ensuring that New Hampshire's solid waste needs are not adversely affected by waste importation.

The Task Force tailored its work to reflect the specific charges included in the Governor's Executive Order. The Task Force held several general meetings, which were facilitated by Charles A. Levesque, President of Innovative Natural Resource Solutions. At the outset, in November 1999, the Task Force surveyed its members in order to ascertain the range of concerns and beliefs of the members and to use that common basis of information as a tool for defining the issues of concern in a semi-quantitative manner. Those results are found in **Appendix A**. In Part I of the survey, specific views were sought on a broad range of issues and the results were very diverse. However, over 70% of the Task Force regarded industry consolidation and issues related to disposal capacity as items of major concern followed closely by waste importation and the cost of disposal.

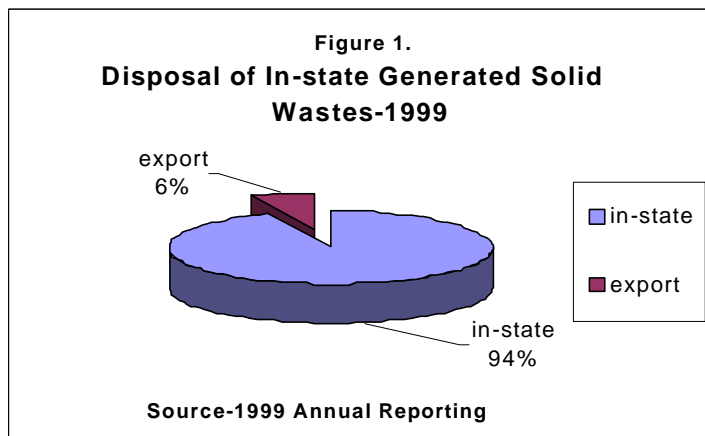
Individual task groups were formed to undertake study of three key issues identified in the survey: industry concentration, cost, and capacity. The task groups met frequently and the full text of their work is presented in **Appendices B, C and D**, respectively. In addition, the Task Force chair, the three task group subcommittee chairs, the DES Waste Management Division Director and Mr. Levesque met on several occasions to coordinate the work of the groups and to develop the overall structure of the final work product.

The members recognized from their individual perspectives that there are a variety of strategies that could address the issues but that there would not likely be one single solution that would address the concerns of all members of the task force. Consensus, by agreement of the task force members, was considered to be an outcome which the members "could live with", even though it would not fully espouse every element of an individual member's position. This means that some recommendations supported by several members are not included in this report due to opposition by others. Also, some objectives may be in conflict with one another. For example, an increase in New Hampshire's disposal capacity, without commensurate increase in neighboring states, might result in an increase in imports. Also, low disposal prices may discourage recycling while high prices tend to make it more financially attractive.

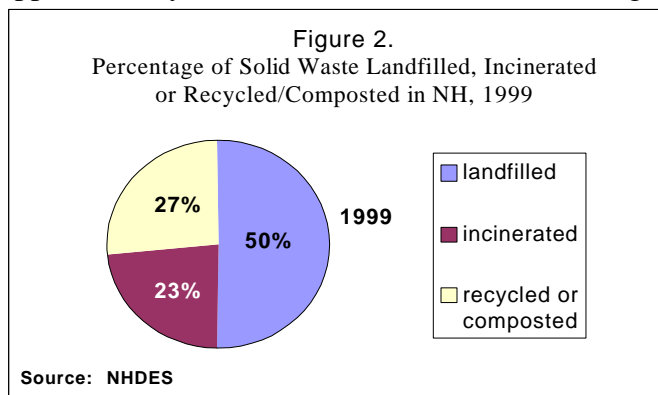
II. Waste Management Trends in New Hampshire

Waste Generation and Disposal

In 1999, New Hampshire's 1,201,000 citizens produced approximately 1,326,000 tons of municipal solid waste or about 5 pounds per person per day. Of the total, 94% was managed in-state and 6% was exported (Figure 1). About 70% of in-state waste was landfilled or incinerated; the balance was recycled, reused, composted or otherwise diverted (Figure 2).



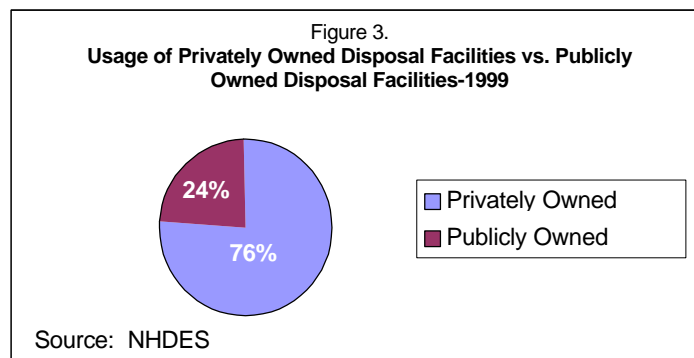
The residual 959,000 tons of waste that remained after recycling, composting and exporting were transported to a mix of public and private facilities (Figure 3). Three large, privately owned landfills located in Berlin (Pulp and Paper Company of America), Bethlehem (Casella Waste Systems) and Rochester (Waste Management, Inc. (WMI)) receive about 55% of the total waste stream. New Hampshire's two waste-to-energy facilities, located in Claremont and Penacook, accommodate 22% of the total waste stream. They are owned and operated by Wheelabrator, Inc. (a subsidiary of Waste Management, Inc.) and are under contract to the NH/VT Solid Waste District and the Concord Regional Refuse Cooperative. Ash residues from Penacook and Claremont are respectively disposed of in an ash monofill in Franklin and landfills in Massachusetts. Another thirteen publicly owned landfills, both lined and unlined, accept approximately 22% of the waste stream; and 1% goes to 8 small, publicly owned incinerators.



Therefore, in terms of total residual waste disposed of in New Hampshire, privately owned facilities manage just over three-quarters of the total waste.

In 1998, 885,000 tons were disposed of in New Hampshire, with an additional 740,000 tons of waste imported from out-of-state. Thus, a total of 1,635,000 tons were disposed of in New Hampshire that

year. In 1999, the out-of-state waste volume was reduced by nearly 40% over the previous year to 534,000 tons. Further significant reductions occurred in 2000 such that the ratio of out-of-state waste to in-state waste disposed of in New Hampshire has fallen from 1:1 to less than 1:3.



Prior to 1990, about 150 unlined landfills accepted a majority of the waste destined for disposal. Eighty closures have been completed and many others are in the process of closing their facilities. To assist New Hampshire municipalities, the state landfill closure grant program became law on June 8, 1994, effective July 1, 1995. The program provides a grant of 20% of eligible costs. Many communities also

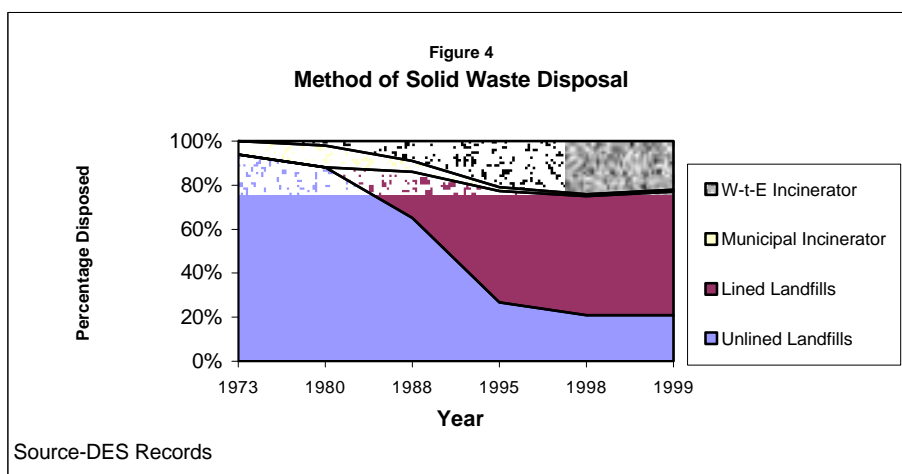
take advantage of the low cost State Revolving Loan Fund for the 80% balance. The State has fully funded the grant program each year since then. In addition, on November 12, 1999, Governor Shaheen signed House Bill 294, which expanded the landfill closure grant program to include 18 municipal incinerators constructed prior to July 1, 1998. The incinerator closure program became effective January 21, 2000.

Since the inception of the landfill grant program on July 1, 1995, the Department has approved 89 grants totaling over \$20.3 million. The Department has not awarded an incinerator

grant as of this date, but anticipates that approximately \$1.2 million will be paid over the next several years to municipalities for costs associated with incinerator closures.

The remaining 70 unlined landfills are expected to be closed by 2010. Additionally, the number of municipal incinerators has decreased, primarily due to financial considerations. As the smaller municipal units become obsolete, the parts become increasingly difficult to obtain, and as air emissions standards become more stringent, operational costs increase. The waste previously sent to these facilities has been shifted to state-of-the-art landfills. These new facilities are also experiencing increasing demand, due to population growth, particularly in the southern tier of the state, and the growing volume of trash that is the result of a strong economy.

Figure 4 illustrates in percentage terms the disposal methods and the manner in which they have changed since 1973. Prominent in the changes are the dramatic decrease in the use of unlined landfills and the equally dramatic growth in new, state-of-the-art lined landfills since the mid 1980s.



Waste Collection and Facility Operation

In New Hampshire there are over 200 public and private collection, storage and transfer stations which serve over 95% of the public. There are about 84 public and private haulers, approximately 1/3 of which are independently owned and operated. Operators of waste facilities, not including haulers, receive training from the Department of Environmental Services' Solid Waste Operator Training Program. At present, there are about 2000 persons who have completed the program and, of that number, 1000 are actively working in the waste industry. There are yearly training requirements that must be met in order to maintain certification. There is sufficient final solid waste disposal capacity until 2010 based on current trends indicated by the rate of recycling and imports, 2000 census data, population growth projections by the Office of State Planning and closure projections by DES. A detailed discussion of capacity is found in Section III, Task Force Findings.

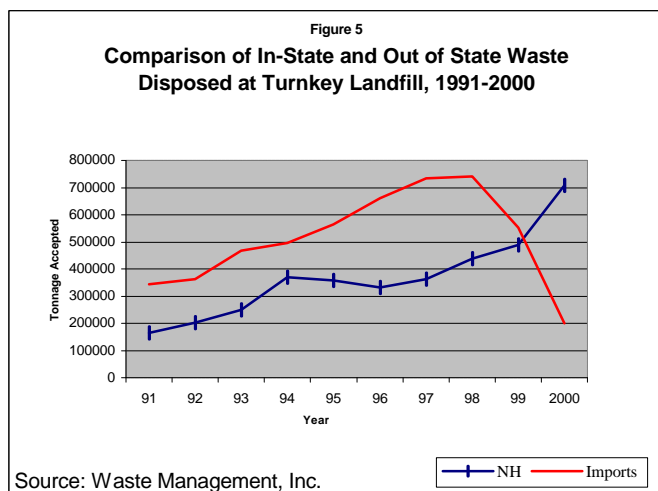
Recycling

In 1990, the Legislature established a recycling goal of 40%, which was to have been achieved by the year 2000. The goal could be reached through a combination of recycling, reuse, and source reduction. The Legislature recognized that increased recycling would help better manage future capacity, possibly lower the costs of solid waste management in New Hampshire, and benefit the environment as well.

Since 1990, there has been a dramatic increase in recycling and, in 2000, 227 of our 234 towns provided access to recycling for their residents. The State's diversion rate in 2000, which includes estimates for recycling, composting, source reduction and reuse, was in the range of 27-30%. This estimate, however, may be understated due to lack of information on recycling activity for business, industry and institutions for which reporting is not required.

The Task Force recognizes the value of setting goals and recommends the setting of objectively measurable goals, such as per capita disposal of waste. Currently, there is a wide diversity in the ways waste diversion is measured in New Hampshire and elsewhere. This produces a variety of numbers that are not at all comparable, making it difficult for New Hampshire and other states to gauge how well they are doing individually and in comparison to one another.

While New Hampshire fell short of the Legislature's waste diversion goal for the year 2000, many New Hampshire communities continue to provide excellent recycling programs that far exceed the 40% level. Many of the towns with the highest recycling rates have locally mandated recycling and/or Pay-As-You-Throw programs. Those with the lowest rates tend to be larger cities. Thirty-eight communities have curbside programs; thirty-five have Pay-As-You-Throw programs; and one hundred and thirty-four have municipally mandated recycling. In general, the higher the tipping fees, the more recycling will occur, because it is more attractive financially in terms of avoided costs. However, as recycling increases in New Hampshire, less waste will be directed to disposal and treatment facilities. Arguably, then, improved recycling in the state would result in the undesirable outcome of in-state space becoming available for imports at privately owned facilities.

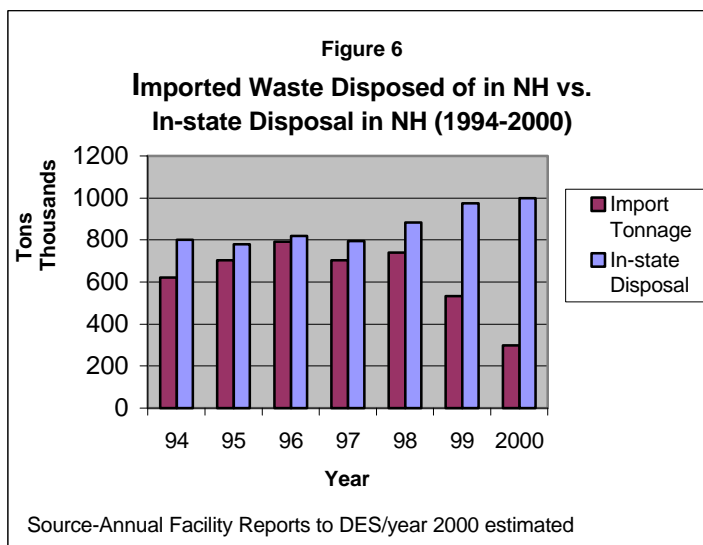


Out-of-state Waste

As New Hampshire built new or expanded major privately owned facilities in the 1980s and 1990s, New Hampshire's imports grew. Waste imports have been significantly reduced since 1998, although waste continues to move back and forth across state lines.

Figure 5 illustrates the overall status of waste importation and in-state waste disposal at the Waste Management of New Hampshire, Inc. Turnkey Recycling and

Environmental Enterprise (Turnkey) landfill facility in Rochester for the period 1991-2000. Until 1999, imports exceeded New Hampshire waste disposed of at Turnkey. While Turnkey was operating within its permit, DES became concerned in 1997 (based upon the 1996 Annual Facility Report) that out-of-state waste receipts were growing at too high a rate. The 1997 report revealed a further increase over the previous year but at a lesser rate in the previous year. DES met with Waste Management, Inc. and crafted a mutually agreed upon permit modification which placed yearly restrictions on the total amount of waste that the facility could accept. Under the terms of the modification, excess receipts in one year must be offset by a reduction of a similar amount in the following year. The modification has had a noticeable effect on the ratio of in-state to out-of-state waste, and in 1999, there was a comparable amount of in-state and out-of-state waste landfilled at the facility for the first time since 1990. Waste Management, Inc. reports that in 2000, they received three times more waste from in-state than from out-of-state. The result for New Hampshire is that capacity at Turnkey for waste under contract is assured until 2010. Figure 6 shows imports and in-state disposal for the *entire state* and reflects a trend similar to Figure 5.



Other states within the region are also addressing the importation concerns. In 2000, the Northeast Waste Management Officials Association (NEWMOA) assembled data on import/exports from the seven northeastern states. The premise of the project was to provide a common basis of comparison of waste flows. More specifically, it identified the net importers (those whose import levels exceed their exports) as opposed to those who are net exporters (exports exceed imports). In Table 1, seven states are compared for their per capita disposal rates. In column 3, the per capita rate is what would be expected should the state manage its own waste in-state. The fourth column shows the actual amount of per capita disposal, which includes the amounts contributed from importation or loss to exportation. If the third column is greater than the fourth, then the state is a net exporter. If the third column is less, then the state is a net importer. For 1999 data, New Hampshire is a net importer with the highest per capita rate of disposal. The data will be updated within the next several months, and the per capita estimate for New Hampshire will likely be between .95 and 1.0 tons/year, demonstrating the reductions in imports in 2000. Nonetheless, New Hampshire's high rate of disposal, as indicated by the third column, clearly indicates a continued need for source reduction and reuse measures as tools for reducing the volume of wastes disposed in landfills and incinerators.

Table1

State	1999 Estimated Population (Source: US Census)	1999 Per Capita MSW Disposed (tons/year)	1999 Per Capita MSW Disposed of at Facilities in the State, <i>Including Imports & Exports</i> (tons/year)
Connecticut	3,282,030	0.73	0.71
Maine	1,253,040	0.51	0.61
Massachusetts	6,175,170	0.78	0.63
New Hampshire	1,201,130	0.85	1.25
New York	18,196,600	1.08	0.78
Rhode Island	990,820	1.16	1.01
Vermont	593,740	0.61	0.47

(Source of data: "Interstate flow of Municipal Solid Waste Among the NEWMOA States", published by NEWMOA, 12/20/2000)

III. Task Force Findings

When the Task Force was created, three interrelated issues were placed before the members. First, *industry concentration* was perceived to be a problem since final disposal capacity was dominated by two companies that own New Hampshire facilities in which nearly three quarters of total waste was either landfilled or incinerated. Second, how much *capacity* for waste disposal is there statewide and how long will that capacity last? Several factors determine the total lifespan of a facility, including imported wastes, the recycling rate, and the inevitable fluctuations brought about by population growth and economic prosperity. Third, *cost of disposal* was of concern to many who had experienced sharp increases in tipping fees at the privately owned facilities, often with only short notice. The following discussion briefly examines and presents key findings relating to each of these issues.

A. Industry Concentration

1. Nationally and regionally, the solid waste industry has become increasingly concentrated and is dominated by fewer large companies.

Following public policy changes in the mid 1980's, the waste industry has become a more capital, knowledge and technology based industry. The waste industry has come to be dominated by relatively few firms in the past two decades. In 1987 the top grossing four firms in Standard Industrial Classification Code (SIC) 4953 (Refuse Systems) accounted for only 3% of total industry revenues or \$112,639,000 of a total of \$3,763,768,000. By 1992, the top grossing four firms in (SIC) 4953 received 43% of the industry revenues or \$6,012,630,000 of a total \$14,101,667,000. While the SIC code system changed slightly to become the new NAICS (North American Industrial Classification System) for the 1997 economic census, examination of NAICS 5622 Data (waste treatment and disposal) showed that the top four firms accounted for

about 48% of total sectoral revenues in 1997. A similar trend applies to garbage and trash collection (SIC 4212) where the top four grossing firms accounted for over one-third of total revenue in 1997 (\$3,794,184,000 out of a total of \$10,984,763,000). Regionally, just two firms account for more than 80 percent of available disposal capacity in Maine, Vermont, New Hampshire, and much of Massachusetts. While there may be sound economic reasons for this concentration - economies of scale, regulatory changes, control of essential/unique resources, financial barriers, lack of substitutes - there continues to be great concern over this trend at the state and local level.

2. There has been an ongoing trend toward consolidation within the solid waste industry regionally and in New Hampshire over the past decade.

A review of economic census data for New Hampshire indicates that there are 13 firms involved in waste management and disposal (NAICS Code 5622). The US Department of Commerce reported in 1997 that these 13 firms accounted for receipts of over \$45 million annually. There are 198 transfer stations in New Hampshire, 13 of which are privately owned. The number of municipal transfer stations has increased significantly since landfill closure began, as smaller communities found them to be economically preferable based on relatively small volumes of waste to dispose of on the one hand and the high cost of construction and operation of a state-of-the-art landfill on the other. The waste collection sector still includes many small, independent haulers, some of whom argue that cost escalation at disposal facilities is making it difficult for them to compete.

The dominant position assumed by the two major waste disposal site owners may give those companies significant market influence. This influence may be used to effect further changes in the price structure and concentration levels of the solid waste industry in this state. The two major waste disposal site owners have substantial market share, and they may be subjected to the scrutiny of the New Hampshire Department of Justice as a result to ensure continued competition in the state. The actions of the dominant firms take place in a complex and interdependent environment in which pricing and industry concentration are subject to multiple factors, such as economies of scale, market power, environmental regulation, importation and recycling rates, and the cost structure of the hauling industry. Additional information is found in Appendix B, Industry Concentration Task Group Report.

3. Municipalities are closing unlined landfills in order to protect the environment and as a response to federal regulations and state groundwater protection requirements.

Unlined landfills may be a source of groundwater contamination. Capping and monitoring landfills is effective in dealing with this possibility. Of the 180 known unlined landfills in the state, approximately 80 have engineered closures, which are based upon the nature and degree of pollution. Landfill closure is not mandated but can be required in order to protect the groundwater resource.

4. Collection, trucking and disposal facilities are managed by a mix of public and private entities.

Approximately 75% of municipal solid waste generated in New Hampshire is disposed of in privately owned landfills and incinerators. Nashua, Conway and Lebanon operate their own state-of-the-art landfills. The majority of the hauling firms in the state are also privately owned. Municipalities are primarily served by their own (or cooperatively owned) collection facilities, while privately owned transfer stations primarily service the commercial sector.

5. The addition of a publicly owned disposal facility or facilities in New Hampshire could allow some communities enhanced local control.

Public ownership of solid waste disposal facilities provides local communities with greater control over the management of their solid waste. Neither the state nor municipalities can ban out-of-state waste disposal at privately owned facilities, but a public facility is neither obligated to accept waste from out-of-state, nor necessarily driven by economic considerations to maximize revenues by acceptance of such waste, thus offsetting potential gains from source reduction, recycling, composting or other community efforts to reduce solid waste generation within the state.

However, as towns have closed their unlined landfills, some have found the costs of constructing and operating a new disposal facility to be far more expensive than unlined landfills. Most have opted to get out of the disposal business and to operate a transfer station, which may require a contract with a disposal facility. This has reduced the amount of publicly owned and operated capacity. The state offers no financial incentives to municipalities to develop new solid waste disposal facilities.

6. The State and its municipalities and businesses have limited options in their ability to affect concentration in the solid waste industry.

Aside from owning and operating a facility or facilities, there is little else the State, municipalities and business can do to affect the trend in solid waste industry concentration. Certain state and federal legal and regulatory reviews of mergers and acquisitions are undertaken to ensure that competition is preserved. Many towns have their own facility, but companies generally rely on the waste industry to manage company waste. One exception to the rule is the Pulp & Paper Company of America, which constructed and operates its own landfill in Success Township. The company disposes of its paper sludge along with municipal solid waste, which is used as a means to provide mechanical stability of the sludge material.

Some states and municipalities that have taken on the responsibility of running a facility have found that public ownership can allow the greater control they desire. A disadvantage of public ownership is found in federal court decisions that have struck down flow control agreements, where a public entity might direct wastes to their facility, thus ensuring the ability to meet bond obligations. A change in current federal law in favor of flow control could allow more public control over solid waste.

B. Disposal Capacity

In New Hampshire, as elsewhere in the northeastern United States, a variety of factors act to either defeat the establishment of new capacity or significantly lengthen the permitting period. These factors include the economics of disposal, collection, and transportation, and local support (or lack thereof) for permitting new or expanded capacity. In addition, moratoria on the construction of new landfills or incinerators (such as the one in Massachusetts that only recently was partially rescinded) put significant pressure on existing New Hampshire capacity, particularly in the 1998-1999 period. The effect of the Massachusetts' moratorium was exacerbated by the unanticipated cessation in operations of a major incinerator in northeastern Massachusetts, which drove additional waste to New Hampshire. Using the State's permit conditions authority, however, that imbalance has been reversed and the ratio of in-state versus out-of-state waste is estimated to be 80% in-state disposal versus 20% import disposal for the year 2000. Refer to Appendix C, Disposal Capacity Task Group Report for further information.

1. New Hampshire has adequate solid waste capacity until at least the year 2010.

In 1999, New Hampshire disposed of about 1.5 million tons of solid waste at a mix of public and private facilities in the state, which at current rates of receipt and all other factors similar to the present, will be adequate until 2010. Note that during the period 1989-2000, there was an annual average addition to disposal capacity of about 1.6 million tons, 75% by private facilities and 25% by municipalities. Thus, supply and disposal demand for capacity were essentially in balance over that 11-year period.

While waste generation rates and permitted capacity are expected to be essentially in balance until the end of this decade, a shortfall of 375,000 tons/year could occur when Turnkey's current permitted capacity will be reached. However, Waste Management of New Hampshire, Inc. has initiated permit discussions with the Department of Environmental Services to address this shortfall. Also, it is reasonable to expect that other landfills may seek to expand their capacity over this period. Further, continued improvements are anticipated in recycling, reuse and source reduction, which will slow the growth in demand for additional capacity.

2. The importation of solid waste can significantly affect long-term disposal capacity available for New Hampshire waste.

In New Hampshire, the impact of waste imports is proportionally as important to New Hampshire as is the import issue to larger states. As previously described, New Hampshire has had concerns that the rate of imported wastes, predominantly occurring at the Turnkey Landfill, was reaching an excessive level, whereby the projected capacity for New Hampshire wastes might be jeopardized. However, the level of imports at the Turnkey Landfill has been dramatically reduced in the last two reporting years, in large part due to permit modifications that provide a schedule for waste acceptance and a mechanism for yearly adjustment.

The U.S. Constitution's Commerce Clause does not permit a state to exclude waste from other states and the federal courts have diligently upheld that principle. Exceptions to the Commerce Clause are recognized under certain circumstances. A more detailed discussion of the Commerce Clause and its exceptions can be found in Appendix D.

3. Municipalities and businesses can improve and expand recycling and waste diversion to reduce operating costs and to minimize impact on New Hampshire final disposal capacity.

Reuse, recycling and composting help to avoid disposal fees and to alleviate the immediate need to build more landfills and incinerators. The most significant contribution occurs when large portions of the waste stream, such as construction and demolition debris, are diverted. New Hampshire experienced a large diversion of wastes when leaf and yard wastes were banned from landfills and incinerators in 1993, mostly through increased composting activities.

Recycling and other diversion activities can be enhanced by making improvements to operations. In the early 1990s, New Hampshire was able to institute a recycling grant program using petroleum surcharge money returned to New Hampshire from the federal government. Although these grant funds are no longer available, there are other grants, such as the DES Used Oil Collection Program, that provide financial assistance, to expand services. Both public and private facilities can contribute to recycling and diversion goals, save town funds and help extend disposal capacity with renewed efforts.

4. Education and outreach are effective means of promoting recycling and waste diversion.

Education and outreach have been shown to be successful in changing attitudes and increasing participation in recycling and waste reduction. For example, when the operators of waste facilities in our state are trained through the Solid Waste Operator Certification Program, we improve the level of solid waste management expertise, site safety and the services offered to communities. Technical and site visits from Department staff offer operators a one-on-one opportunity to discuss concerns or questions about current or future operations. The Do-it-Yourself Used Oil Program has collected more than 242,000 gallons of used oil since its inception in 1994, promoting proper and safe management of the oil, the unsafe disposal of which is a major threat to groundwater quality.

5. Towns and cities with locally mandated recycling or pay-as-you-throw programs tend to have higher recycling rates, which reduce the amount of solid waste that needs to go to disposal facilities.

There are many factors which influence the degree of success of recycling ordinances and pay-as-you-throw, including previous diversion rates and the degree of citizens and business participation in recycling, reuse and source reduction. Generally, towns can expect to increase diversion by 10 to 50 per cent if they implement mandatory recycling and/or pay-as-you-throw. Currently, there are 134 New Hampshire towns with mandatory recycling ordinances and 35 towns with Pay-As-You-Throw Programs.

6. There are several useful methods to measure progress in solid waste management. In addition to per capita generation and recycling rates, tracking per capita disposal would help to evaluate trends in solid waste management in New Hampshire.

The New Hampshire Legislature regularly requires the Department to report on solid waste generation, the level of diversion and disposal. This has been accomplished through data

submitted by the facilities to DES in their annual facility report and by towns in their annual recycling report submitted to the Governor's Recycling Program. Per capita disposal should also be tracked since that measure can be used to emphasize an individual's role and responsibility in reducing waste generation.

7. Increased private sector capacity in neighboring states provides additional disposal options (capacity) for New Hampshire.

Capacity analysis should not be limited to New Hampshire because waste is moved across state lines. If Vermont, Maine or Massachusetts adds capacity, or exports waste to disposal locations other than New Hampshire, this may help to preserve New Hampshire's capacity. However, if New Hampshire adds capacity while neighboring states do not (due to moratoria, siting problems, regulatory problems, etc.), then New Hampshire facilities may draw waste from other states. New Hampshire should be proactive with nearby states to encourage development of their own capacity.

8. Each of the major publicly and privately owned landfills in New Hampshire has additional land which may provide an opportunity for future expansion of these landfills.

Public Facilities: The Nashua Four Hills Landfill occupies approximately 100 acres, which include the unlined MSW and C&D landfills, as well as the expansion of a new "state-of-the-art" landfill. The expansion will provide the City with capacity until 2020. The total parcel of land on which the landfill is located is approximately 300 acres. Although no analysis has been done, some portion of the adjacent land may be suitable for landfill development. Lebanon has recently built Phase IIa of its landfill. Phase II (14 acres in totality) will provide 25 years of capacity to the City. Only Phase IIa (5.4 acres) has been built. The Conway Landfill is currently operating in Phase II of a 5-phase landfill, which will provide capacity to 2015. These three lined landfills are expected to meet 15 percent of the state's overall landfill capacity.

Private Facilities: Turnkey Landfill of Rochester, owned and operated by Waste Management of New Hampshire, Inc., has a permitted site life of approximately nine additional years, or until the year 2010. An area exists to the north of the current landfill that may provide another 70 acres of capacity. The overall property owned by Waste Management, Inc. is 1,216 acres. The NCES Landfill in Bethlehem, owned and operated by Casella Waste Systems, Inc., occupies 50 acres of an approximately 100-acre parcel of land. Physical suitability of the site for expansion beyond stage III, which is under construction, has not been determined. The New Hampshire Supreme Court determined on May 1, 2001, that NCES has all necessary local approvals to expand the landfill on at least 57 acres of the parcel. There are currently 4 ½ years of permitted capacity remaining.

9. If we achieve only a moderate increase in recycling and waste diversion, the closure of small waste combustors and unlined landfills, combined with population and employment growth, will require an increase in disposal capacity beyond 2010.

Between 1998 and 1999, waste generation in New Hampshire increased by 8%, largely as a result of population growth and expanded consumer purchasing. Additionally, the closure of

unlined landfills and small municipal waste combustors has decreased existing capacity, a trend that is expected to continue for the next several years. The impact of these factors on existing capacity can be abated by additional recycling, reuse and source reduction efforts, particularly at the three public landfills. Due to the large volume managed at the Turnkey landfill in Rochester, additional capacity will be required beyond the projected limit of available permitted capacity at the site.

10. The current system of reporting does not adequately track the movement of solid waste across state borders.

The reliability, completeness and consistency regarding waste flows into and out of New Hampshire is continually improving. Waste facility annual reports required under New Hampshire administrative rules are being streamlined; however, there is no requirement for waste haulers to report at all, leaving a significant gap in information. Since the waste collection and disposal industry is a loosely integrated system, information gaps such as this limit development of the detailed knowledge required to make municipal decisions regarding waste disposal.

In December 2000, the Northeast Waste Management Officials Association (NEWMOA) published a summary report on “Interstate Flow of Municipal Solid Waste Among NEWMOA States” which includes the New England states and New York. Data for each state is presented and similarities and differences between states regarding information required by the states is discussed. This document is a useful first step in further analysis of interstate waste flows and can be obtained from the NEWMOA website at <http://www.newmoa.org/>.

11. Continued efforts to reduce the toxicity of the waste stream and to promote recycling through minimum recycled content requirements can help New Hampshire to achieve goals on waste diversion.

New Hampshire has been a leader in efforts to reduce the toxicity of the waste stream and to promote recycling. In 1990, New Hampshire was the second state in the country to adopt the Toxics in Packaging Law prohibiting the intentional introduction of lead, cadmium, mercury and hexavalent chromium in packaging. The Department is implementing a Mercury Reduction Strategy and a Dioxin Strategy to achieve additional reductions. Established in 1995 by the New Hampshire Legislature, the Recycling Market Development Steering Committee has been working to develop markets for recyclables. Further, there are recycled content standards for paper products purchased by the State.

C. Disposal Costs

The Task Force used two methodologies to examine costs for several categories. First, since disposal companies do not have a single rate that applies to all customers, a survey was sent to regional disposal facilities within the state to determine the gate rate, municipal contract, commercial contract, and general contract rate for the period of 1990-2000. Secondly, the Task Force requested the Department of Environmental Services to obtain and analyze the data

provided by the Solid Waste Digest. The Digest is a national publication that tracks facility information throughout the nation on a monthly basis.

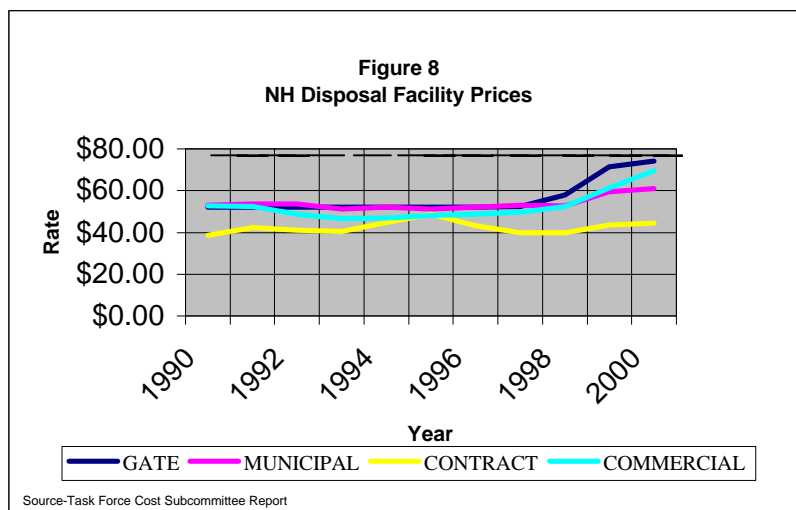
Task Force Survey:

The New Hampshire gate rate has been the topic of most concern due to the increases in that rate that occurred in 1997. The gate rate is estimated to apply to approximately 15% of the waste derived revenues of the two major disposal companies, Waste Management, Inc. and Casella Waste Systems. Figure 7 provides the remaining percentages of other fee types that constitute the market of a typical New Hampshire disposal facility. The majority of fees are attributed to contractual arrangements (85%) with the largest percentage of the market share (60%) attributed to the commercial contracted rate. Independent haulers that do not identify their wastes as municipal are usually classified as commercial or spot market (gate rate).

Figure 8 details the Task Force survey results submitted by solid waste disposal facilities.

Gate Rates - The gate rates are shown for the period 1990-2000 and represent fees charged to non-contractual customers (or spot market). As of 2000, the average gate rate for incinerators and landfills in New Hampshire is \$74.31/ton. Over a 10-year period, the average fee is \$56.43/ton. There has been a 29.8% increase in gate fees for the period of 1995 – 2000, compared to a national estimated increase of 2.1% cost of living for the same period of time.

Municipal Rates - Municipal rates are included in contracts with cities and towns and approximate 24-30% of the fee structure of a typical disposal facility. As of the year 2000, the

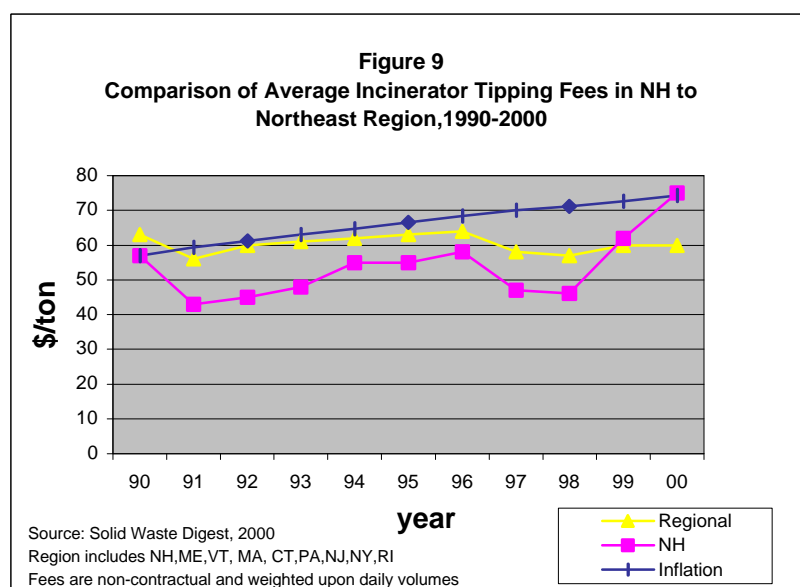


average fee is \$60.89/ton with a 10-year average of \$53.89. The municipal rates have increased 15.8% for the period of 1995-2000.

Commercial Rates - Commercial rates are direct business agreements with waste generators and approximate 55-65% of the fee structure of a typical disposal facility. In the year 2000, the average commercial rate for New

Hampshire was \$69.50/ton, with a 10-year average of \$52.43. The commercial rate increased 30.5% since 1995.

Contract Rate - The contract rate is the fee charged to independent waste haulers. In the year 2000, the average contract rate for New Hampshire was \$44.36/ton, with a 10-year average of \$42.42/ton, showing a 10% decrease since 1995. It should be noted that the findings for contract rates are not in agreement with data obtained by limited surveys of independent haulers, which suggest the gate fee to approximate \$70.00/ton. On the one hand, this may be due to the fact that surveys were received from less than 1% of the haulers, but on the other hand, the regional surveys may not actually depict the fees assessed at the state's waste to energy incinerators. Given the gaps, survey size and questions in both sets of data, further study on contract fees as they apply to independent haulers is in order.



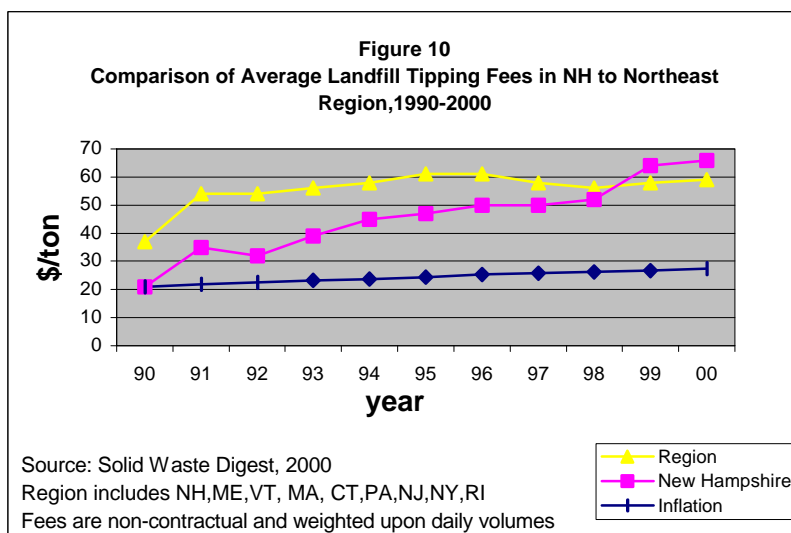
Solid Waste Digest Data

The Task Force reviewed cost data provided by the Solid Waste Digest, a national publication that provides industry cost data. The information comes with caveats. First, the data only reflects the fee paid by non-contractual customers, commonly referred to as the “gate rate” or spot market. As previously mentioned, the gate rate approximates 15% of the market share of the two major waste disposal companies.

Secondly, the fees shown may be

higher than those achieved through a negotiated, long term contract and do not reflect the total costs of waste management in that transportation charges, state or district fees, and equipment rental charges are not included.

Thus, the total costs will be considerably more than the gate or contractual tonnage fees and will depend upon location and negotiated costs. Third, the data provided by the Solid Waste Digest is averaged, although the individual data points are weighted based upon daily intake volumes. Therefore, individual experience will vary, perhaps considerably, from those averages. While consistent over time, the data is periodically updated by the



publishers. In this case, the data for 12/2000 was used. The Task Force members agreed that the data provided a useful snapshot of data comparable state to state.

The Task Force did identify general relationships that would assist in understanding tipping fee behavior in New Hampshire and regionally over the decade of the 1990s. Figures 9 and 10, respectively, show tipping fee data for incinerators and landfills. For each figure, a data set was calculated based on information from the Bureau of Labor Statistics in order to illustrate cost behavior of landfills and incinerators when compared to increases which could be attributed solely to the effect of inflation over the period shown. Figure 9 shows that New Hampshire and regional incinerator tipping fees tracked below inflation throughout most of the period. However, New Hampshire rates escalated sharply from 1998 through 2000.

By contrast, Figure 10 shows the landfill tipping fees both in New Hampshire and regionally exceeded a level that could be attributed to inflation alone. In New Hampshire, landfill tipping fees increased steadily throughout the decade of the 1990s, whereas the regional fees remained significantly above New Hampshire's. In the late 1990s, a broad decline took place in the regional fees such that, in 2000, New Hampshire tipping fees, on average, exceeded the region.

Historically, waste disposal costs across the United States and New Hampshire have fluctuated as a function of many variables, including environmental regulations, regional capacity reduction, pricing competition, mandated volume reductions, terms and conditions of negotiated contracts, and investments in capital equipment, property, a highly-skilled workforce and environmental technologies.

New Hampshire landfill costs have risen steadily since 1992, leveling off in 1996 and 1997 followed by a rise to a ten year high in 2000. No single, specific circumstance caused the increase, but rather it was a response to a combination of inflation, cumulative decrease in capacity due to the closure of old unlined landfills and market factors. See Appendix B, *Cost Increase/ Impact Task Group Report* and Appendix E, a *Summary of Regulatory and Marketplace Changes 1981-2000*.

1. Increased recycling and waste diversion may help lower net solid waste management costs paid by municipalities and businesses.

Recycling treats certain waste products as a resource, rather than a waste. Some products, such as aluminum, can produce significant revenues while other products have little or no value. The combination of recycling revenues and "cost avoidance" is what makes recycling efforts financially worthwhile in addition to other benefits. In fact, the higher solid waste disposal costs rise, the more attractive recycling and waste diversion become.

2. Solid waste disposal costs, attributed to non-contractual gate fees, have generally risen over time and can be expected with variations to continue increasing in the future.

As shown on Figures 9 and 10, average gate fees (non-contractual) of incinerators and landfills have varied over the period 1990-2000 and have, in general, risen over the period. Comparing the end point years, New Hampshire incinerator gate fees increased 2.5% per year, whereas New Hampshire landfill gate fees grew at a compound rate of 11% per year during the

same period. Using inflation as a benchmark, incinerator fees in 1990-2000 were consistently below the growth attributable to inflation alone. At the same time, landfill fees, both regionally and in New Hampshire, were consistently above inflation.

3. New Hampshire's municipalities usually negotiate contracts on a town-by-town basis and tend not to join together to strengthen their purchasing power in order to lower prices for solid waste services.

With notable exceptions, towns have not been inclined to establish districts, preferring instead to work on their own. The practice may be changing now that towns must deal with current market prices if their own landfill has closed, thereby creating more incentive to improve their negotiating position.

4. The toxicity of the solid waste stream affects the cost of constructing and operating solid waste disposal facilities.

One of the most important parameters affecting the design, construction and operation of solid waste facilities has been the “toxicity” or toxic components of the waste stream. It should be emphasized that this has been a relatively recent development in the history of solid waste management. It was not until the post-WWII era that the waste stream, at both the industrial and household level, began to contain significant levels of toxic components. Double lined landfills with drainage and gas controls are required because many of the leachate constituents, such as industrial wastes, electrical/computer components and household wastes, contain solvents, heavy metals and petroleum constituents that are above the drinking water limits and public health standards. Since landfill leachate can affect both the groundwater (90% of New Hampshire’s drinking water) and surface water drinking water supplies, it is necessary to collect and further treat the leachate prior to release. The required liners, wastewater collection, transportation and treatment all add to the cost of solid waste disposal. In terms of air emissions, solid waste incinerators accounted for 35% of the state’s mercury emissions inventory in 1997. In 1999, NHDES supported legislation that established a stringent mercury emission limit for the state’s two largest waste-to-energy incinerators. This action is the primary reason that solid waste incinerators now account for only 17% of the mercury emissions in the state.

5. New Hampshire's solid waste disposal costs are affected by the number and location of disposal facility options in New England.

A limited number of facilities will dictate higher prices for solid waste disposal. In part, the number of facilities has been diminished due to federal regulations impacting closure of old, unlined landfills, as well as encouragement provided to communities to take advantage of the State landfill closure grant program. However, New Hampshire is part of a regional market, and this state is affected by policies in surrounding states. These policies, such as the long time (recently modified) moratorium on the construction of landfills in Massachusetts, can have significant effects on the costs of disposal in other areas of the regional market. It should be recognized that there are several other factors that will have a pronounced impact on costs, including pricing competition, terms and conditions of negotiated contracts, investments in capital equipment, and labor conditions.

6. The distribution of capacity in New Hampshire is demographically imbalanced.

The population distribution in New Hampshire is such that the 20% of the population lives in the roughly 4,500 square mile area north of a line connecting Charlestown, Alexandria, Alton and Wakefield. The remaining 80% live south of that line in the remaining 50% of the state's 9,304 square miles. In the North Country, there are two municipal landfills in Lebanon and in Conway and two privately owned landfills in Success Township and Bethlehem. In the south, there are two commercial incinerators in Claremont and in Penacook and the state's largest landfill, Turnkey, is located in Rochester.

Most areas of the state have reasonable access to disposal facilities. However, in the southwest area of the state, including Cheshire and part of Hillsborough County, many communities have their waste disposed of in Rochester, some 90 miles more or less from the center of Cheshire County. The general configuration of disposal facilities was not planned. It resulted over time from a series of unlinked private investment decisions combined with municipal decisions to build state-of-the-art landfills or transfer facilities to replace their old, unlined landfills.

7. Waste disposal fees vary widely across the Northeast with a seven state weighted average gate rate of \$61.45/ton for incinerators and landfills.

Table 2 provides a snapshot of comparative gate rate costs across the northeast based on December, 2000 data. Recall from Figure 7 that the so-called gate or non-contractual rate represents an approximate 15% of the market. The remainder of the market consists of variable term municipal and commercial contracts. The Task Force used Solid Waste Digest information in order to achieve a level of consistency and, therefore, comparability. The Task Force also conducted its own survey of New Hampshire disposal facility costs over the period 1990-2000 as shown in Figure 8. The two sources are in general agreement. For example, the average gate rate for incinerators and landfills in New Hampshire in 2000 was \$74.31/ton calculated from survey results compared with the Solid Waste Digest average for December, 2000 of \$67.63, a difference in the average of just under 9%.

Table 2 compares the weighted average gate rate data for incinerators and landfills with the average "with processors" gate rate data. The latter category includes transfer stations, which in some cases, do not assess a fee, implying that a political subdivision subsidizes the cost through its tax base. Waste collected at transfer stations may also be exported to lower cost facilities out-of-state. In either case, the average cost is reduced. Between states, the weighted average fees vary by 21% and the average with processors varies by 24%. In both cases, Maine and Vermont are the low cost states.

Table 2

Average Gate Rate Structures for the Northeast Region as of December, 2000¹

<u>State</u>	Weighted Average of Disposal Facilities ²	Weighted Average with Processors ³
	Fee	Fee
New Hampshire	\$67.63	\$61.50
New York	\$65.83	\$61.92
Massachusetts	\$65.34	\$69.28
Connecticut	\$67.18	\$67.68
Rhode Island	\$56.80	\$58.82
Maine	\$53.71	\$52.91
Vermont	\$53.70	\$54.65
average ⁴	\$61.45	\$60.96

¹ Data obtained from the Solid Waste Digest 1/2001

² Weighted average is calculated by comparing a state's percentage of incineration with that of landfilling, e.g., NH has 86% landfilling (@\$66.43) and 14% incineration (@\$75.02).

³ Weighted average with processors includes transfer stations and processing facilities.

⁴ Average is a straight (simple) average of all previous weighted values.

IV. Task Force Recommendations

The Solid Waste Task Force has developed a wide range of recommendations aimed at improving the management of solid waste in New Hampshire. One of the objectives of the Governor's Executive Order is "to assist the Department of Environmental Services and the New Hampshire Department of Justice in their review of changes in the solid waste industry." As a result, some of the following recommendations are placed on the agencies for action. However, the Task Force agrees that implementation of the findings of this report must be the collective responsibility of all of the public and private sector contributors to this report and the constituencies that they represent.

A. Industry Concentration

1. The New Hampshire Congressional Delegation should consult with a cross-section of New Hampshire citizens and solid waste and other environmental professionals prior to endorsing or rejecting any federal legislation regarding importation or exportation of solid waste across state borders.
2. The Department of Environmental Services should propose a comprehensive agreement with other New England states that urges each state to be responsible for in-state solid waste generation, to standardize regulations for solid waste management and, through NEWMOA,

should further explore environmentally sound regional solutions to disposal cost and capacity issues.

3. The Department of Environmental Services should coordinate with the NH Attorney General's Office to review and evaluate market conditions and competition in all sectors of the solid waste industry as part of an overall strategy to ensure fair competition and reasonable disposal costs.
4. The Department of Environmental Services and the NH Department of Justice should coordinate with regulatory agencies throughout the region and the nation to address shared concerns regarding trends toward consolidation within the industry on a national and regional basis; and they should explore other states' efforts to ensure fair competition and reasonable disposal costs within the developing market structure of the solid waste industry.
5. A comprehensive study should be conducted by the Department of Environmental Services and/or a qualified consultant, with input from interested stakeholders, to determine whether alternatives to New Hampshire's current solid waste market, including greater market participation by local municipalities and the State of New Hampshire and, if available, alternatives adopted by other states would enhance New Hampshire's ability to 1) achieve its solid waste reduction goals, 2) decrease the importation of solid waste, 3) minimize the need to expand disposal capacity; and 4) reduce or stabilize costs to local citizens, businesses and municipalities.
6. Advance and advocate policies and programs which will encourage the development of a more competitive market for reliable, cost-effective and environmentally sound waste disposal.

B. Disposal Capacity

1. Public and private entities should find ways to increase source reduction, recycling and composting in New Hampshire as a way to minimize the need for future disposal capacity.
2. The Department of Environmental Services should continue to provide assistance on: the permitting of recycling facilities; measures to reduce and detoxify the waste stream; the design and operations of transfer stations; and on alternative disposal options.
3. The Legislature should consider establishing financial incentives, such as a low interest revolving loan program and a matching grant program, to be used by municipalities and other public entities for the establishment of new facilities for recycling and waste diversion.
4. The Department of Environmental Services should continue to monitor waste disposal facilities in order to more accurately project availability of future capacity and to encourage an equitable balance between in-state and out-of-state waste.
5. In order to provide for orderly access to disposal capacity, a minimum seven years of state-wide permitted capacity should be maintained (taking into account disposal capacity in neighboring states).

6. The Legislature should review the effectiveness of the public benefit statute with respect to the establishment of future reserve capacity.
7. Collaborative development of host community agreements and regional municipal agreements to facilitate development of disposal capacity should be encouraged.
8. Neighboring states should be encouraged to increase recycling and disposal capacity. Any efforts taken in the area will strengthen the regional markets for recycling and disposal.
9. The Department of Environmental Services should continue to improve the accuracy and reporting from municipalities. Since there is no current statutory requirement for waste haulers to report, the Legislature should consider requiring reporting by waste haulers regarding the amounts, origin, and destination of transported wastes.
10. The Legislature, with the Department of Environmental Services, should establish goals for reduction of disposal of waste on a per-capita basis.
11. The Legislature and the Department of Environmental Services should explore the establishment of standards with respect to toxicity and recyclable content that would apply equally to both in-state waste and out-of-state waste destined for disposal in New Hampshire.

C. Disposal Costs

1. Public and private entities should increase source reduction, recycling and composting in New Hampshire to help lower solid waste disposal costs.
2. The State should continue to promote the "Pay-As-You-Throw" approach, which has successfully increased local recycling rates and reduced solid waste disposal while lowering municipal solid waste management costs in several New Hampshire communities.
3. Municipalities should establish "buyer groups" as an effective way to achieve volume discounts and lower prices.
5. In order to reduce costs, solid waste districts and municipalities should consider unbundling the components of waste management contracts (separate collection, transportation and disposal) as part of the bidding process in future contract renewals.
6. In order to allow communities to consider a full range of disposal options, the Legislature should explore the creation of financial incentives, such as low interest loans, which would help fund the design and construction of municipal or waste district owned facilities. The true (full) costs of disposal should be recognized and publicized. Communities using such publicly funded capacity should be required to demonstrate that they meet certain volume and toxicity reduction requirements.

7. The Legislature should explore the application of a surcharge as a means of raising revenue to improve local recycling, composting and waste collection facilities.
8. Continue to sponsor workshops, conferences and informational presentations targeted at solid waste districts, municipalities and independent waste haulers. Emphasize in-state and out-of-state disposal options, and contract negotiation training directed to selectmen, town administrators, public works directors or others involved in solid waste policy or decision-making roles.
9. Continue to develop and disseminate information and provide public education programs to promote source reduction, recycling, composting, and household hazardous waste recycling and disposal.

Appendices

The following appendices provide additional information, including the task force survey, the three task group reports and a summary of regulatory and marketplace changes.

List of Appendices

- A.** Solid Waste Task Force Survey Results
- B.** Cost Increase/Impact Task Group Report
- C.** Disposal Capacity Task Group Report
- D.** Industry Changes Task Group Report
- E.** Summary of Regulatory and Marketplace Changes 1981-2000

Appendix A

Solid Waste Task Force Survey Results

SOLID WASTE TASK FORCE SURVEY RESULTS

Note on the survey results: Every effort was made to accurately portray the answers provided through the survey. Where necessary, answers were edited for brevity and purposes of consolidation of like answers. Not all questions were answered by all respondents, thus the differences reflected in several of the charts. In the event that an individual's response was not accurately conveyed, which is most likely due to handwriting interpretation, please let us know and corrections will be made. A total of twenty-six surveys were included in this summarization. Numbers in parentheses following a response indicates the number of times a response was given.

PART I

1. What are the three most positive aspects about solid waste management in NH?

Current adequate capacity (7)
Likelihood of substantial additional capacity
Commercial facilities are well regulated, operated in a safe, environmentally sound way. (3)
Quality haulers and transfer facilities
High technology landfills and incinerators
Cost of handling and disposal is still reasonable
High efficiency by quality solid waste facilities
Closure of older MSW sites (2)
Closure of small incinerators
Emphasis on landfill disposal
Handling of household hazardous waste (2)
Having NRRA for the marketing of products
Strong non-profit involvement
Governor's Recycling office activities
High rates of recycling in selected communities (4)
Most municipalities in NH offer recycling. (2)
Recycling Market Development Specialist position
Recycling is a priority (2)
Recycling is a local initiative
Growing acceptance of pay as you throw
Most residents are concerned with the environmental aspect of solid waste management (3)
There is still time to seek solutions to the issues.
High degree of compliance
Well trained operators
Excellent peer support
History of environmental responsibility
History of financial prudence
Sharing of ideas for dealing with MSW
Good examples exist
Community involvement in waste management decisions
Local control (5)
All levels of government are committed
That state and local officials have an awareness (2)
Good regulatory support (2)
Regulatory changes are beginning
DES works towards a goal of progressive, reasonable and workable solid waste rules
NHDES willing to participate to solve problems (2)
Formation of the Governor's Task Force
Good network of a variety of organizations able to assist municipalities
Strong regulatory controls/good DES regulations, appeal process and training program

Solid waste program is linked to regional economics

Recognition of the strength of private sector role
Non-political

2. *What are your three greatest concerns regarding solid waste management in NH?*

The permitting process for the siting of new waste facilities; most particularly, whether the public benefit criteria required by the legislature have been effectively implemented, and the vulnerability of municipalities that lack zoning ordinances and site plan review regulations
Lack of comprehensive plan to reduce waste as source and recycle
Lack of long-term coordinated state solid waste plan (2)
Volume and toxicity of waste stream (3)
Poor waste reduction strategies and practices
Inadequate money for reduction of toxic stream
Cost (7)
Future costs of handling and disposal of solid waste
Economic concentration
Imports (5)
Industry consolidation (8)
The low rate of recycling in NH (2)
The difficulty of getting towns and cities to cooperate on a common problem
Restrictive regulatory climate (NIMBY) (3)
Limited Disposal Options (5)
Lack of future disposal capacity (6)
May look solely to government as the solution
May lean toward "isolationism"
Lack of state resources for waste management
Lack of economic analysis in determining "appropriate" recycling rates
Lack of markets for recycling markets
Declining interest with recycling
Lack of cost effective recyclables processing in small towns
The need to avoid a recycling market failure
Poor statewide recycling programs
Local apathy based on relatively low tipping fees and considerable imports
Unwillingness of locals to accept responsibility
Control will switch from local level to state level
Towns are not in control of solid waste costs.
Over-reliance on few private sector facilities
Barriers to new public sector facilities.
Lack of control of facilities
Excessive time for permitting/modifications
Lack of energy recovery incineration
Private facilities will not be able to be sited
Poor geographic spread of disposal facilities
Lack of local/state oversight of existing facilities
In state population growth
Environmental risks
Use of incineration
Solid waste district or county owned landfills being permitted
Sludge
Perceptions not facts will drive solid waste management

- 3) *There have been changes in the solid waste industry, including corporate consolidation, increasing imports, decreasing capacity, disposal price escalation and sluggish recycling activity. Please indicate your sense of the relative importance of the issues?* (results on last two pages) 4. *Please indicate how you would address each of the above issues.*

a. Consolidation in the solid waste industry

Review/watch for anti-trust implications. (4)

Restraints beyond existing anti-trust remedies are unnecessary.

Require through state law that there are at least three large companies in competition at any one time.

If consolidation in the solid waste industry is legal, not an issue. If it is not legal, this is DOJ issue, not DES. Lack of breadth in disposal options (both private and public) is problem. This is a permitting issue, not legal issue.

Watchful, non-interference

Encourage free enterprise/competition.

Except in the case of a monopoly, leave business alone in terms of who owns who. Much better we direct our resources at making sure whoever it is, is doing it safely, properly, and within our own regulations. Higher prices will encourage better management at all levels.

Promote out of state alternatives as well as source reduction, less demand=less mkt power

Low cost loans and free management advice to small businesses opening up solid waste handling companies

Try to encourage competition through small waste companies as well as not-for-profit

companies/associations/municipalities. We need to encourage alternative disposal outlets.

Develop public disposal capacity that would offer an equal opportunity for competitive disposal between large companies and smaller haulers. This would equalize small haulers to vertically integrated companies without forcing small haulers to raise capital for a disposal facility. In larger communities, franchise service to one or more haulers to assure critical mass to buy trucks.

Competition via public investment/facilities (5)

Alternative structures and/or regulatory models, such as public ownership/operation of waste facilities or regulating the waste industry as a public utility, should be considered. (2)

The public sector should take control, site incinerators, etc., address imports and manage the situation by law and not leave it to the limited private sector.

Creation of more public and private facilities, effort to keep market diversified

Permit a limited number of new facilities

Use fact based data vs self serving opinions.

Encourage waste reduction, recycling

Use bid process

b. Impact of out of state waste in NH

Impose a state surcharge on *all* trash into a dedicated fund. (2)

A surcharge on all waste *imported* into NH (6) (must stand court review)

The surcharge/cooperation between states for interstate regulation.

Impose surcharge if out of state waste exceeds capacity; could be used as revenue source.

Creative pricing structure that would discourage waste imports

Solid waste district or county owned landfills to control where waste comes from (2)

There not much that can be done to restrict out of state waste, make sure that out of state waste is recorded and make state residents are aware of it

Proposed action-create third party remediation fund-assure remediation reserves (not just monitoring) from landfill owners, limit incineration to existing amounts.

Address issue at the highest level-Governor to Governor

I do think that the impact of 700,000 ton/yr into landfills we are attempting to convince our own residents are inadequate is a problem. Maybe we need to work with our neighbors to address the issue, or stop making disposal capacity an issue.

Encourage neighboring states to develop disposal capacity as part of regions economic infrastructure.
Cut back on imports.

This is permitting issue only, to be addressed on a facility-by-facility basis.

If the state has adequate capacity-why is this an issue? Doesn't this help keep disposal costs lower for NH disposal customers?

It's not a problem, it's a business opportunity.

c. Decrease of in-state disposal capacity

Provide state owned disposal facilities.

State needs to take more responsibility.

State should take leadership role in identifying future disposal facility sites based on market/demographic demands and make the locations know.

If private enterprise and local governments can't/won't build more capacity, then state government should do it.

Perhaps the DES should start its own search for a state wide facility.

Public owned capacity (landfill 1 or 2) reserve minimum of 10 years capacity

Options need to be created through not-for-profit or government agencies.

Encourage permitting of new facilities, both in private and public sector.

Statewide review of potential sites, state encouragement and assistance in developing, local incentives to accept a site.(2)

The problem is not one of disposal capacity; it is one of excessive waste of generation/ importation.

Encourage new sites with quicker permitting and funding for sites for NH trash only with recycling and composting.

Solid waste district or county owned landfills being permitted

Use revenue from out of state surcharge to subsidize new landfill construction.

Permit more facilities and perfect low cost incineration.

Promote out of state alternatives as well as source reduction, less demand=less mkt power

Encourage state agencies to expedite all reviews and permitting of any proposed facilities.

Evaluate expansion potential at existing facilities.

Leverage private capital and expertise to build and operate additional capacity.

Permit a limited number of new facilities.

Improve recycling/waste reduction programs.

The siting and construction of new facilities should not be the primary means of solving this problem.

Not yet a major concern

I think this is not such a problem as we've made it. There is plenty of disposal capacity if we place more emphasis on safe disposal and suitable areas.

d. Disposal price escalation

Review for illegal use of monopoly power

Closer oversight by Attorney Generals Office

Require at least three large companies to be in competition at all times.

Encourage and support more private waste haulers.

Encourage new sites with quicker permitting and funding for sites for NH trash only with recycling and composting.

Market forces and local decisions, in conjunction with a mix of permitted capacity and well written permits, will address.

All costs will increase; public facilities might offer more control over rate/amount of increase.

Decrease the amount of waste generated and costs will drop.

Public owned capacity, acquiring and permitting a landfill site may be sufficient to drive prices down without actually opening a landfill.

Provide more competition by opening state-owned facilities in various parts of the state.(2)

The state should monitor the availability of capacity and provide assistance to ensure available capacity.
Encourage facility development with public resources if necessary.
Solid waste district or county owned landfills being permitted
Introduce competition.
A public utilities-type model could be employed to ensure that disposal prices are fair, yet are at a sufficient level to make source reduction and recycling more economically advantageous.
Permit a limited number of new facilities
Increase competition, assist independents with transfer stations
Compare NH pricing for solid waste services to other areas of New England or New England as whole.
The higher the cost, the more source reduction, reuse, recycling. (3)

e. State Recycling goal not met

Give more emphasis to finding and/or developing markets. (2)
Emphasize "cost avoidance as a major benefit."
This is where the most obvious improvements can be made. Encourage/require sorting and recycling of glass, plastic and aluminum by public entities (local gov'ts, schools).
Ban recyclables from landfills.
State should mandate recycling for all communities. (2)
Make recycling goal statutory or regulatory requirement of waste industry.
The state should provide more assistance to towns in encouraging recycling. (2)
Offer convenient recycling.
Financial subsidies for companies handling recyclables, making the recycled items more worthwhile to recycle.
The state needs to get serious about this goal by providing necessary economic supports/ incentives to encourage recycling and by banning the disposal of certain recyclable materials.
Educate, legislate, stricter laws and regulations regarding recycling.
Focus more on local effort.
Ongoing constant education state wide, more economical curbside collection of recyclables, encourage localized cooperative recycling programs for small towns.
Drive recycling programs to management at the source vs. after collection.
Evaluate the changing types of recyclables for actual quantities, weights, and volumes. Is the goal realistic? Provide more local outlets/uses of the recyclables.
Close incinerators.
Create publicly owned disposal sites.
Goal was always somewhat arbitrary, so this does not especially concern me.
Not to worry.
Since this "goal" is immeasurable, I'm not really even sure it is unmet!
Evaluate waste disposal per capita and set a realistic goal to be met.
It would be good to meet; 37% vs 40% is not too bad. However, fundamental state environmental or economic condition not at play here. Increasing recycling will not substantially change real disposal needs.

f. Absence of disposal options in geographical regions of the state

Build public facilities where deficits exist. (2)
Regional or state government should build transfer stations or landfills.
Develop capacity that is accessible to all regions.
State should take leadership role in identifying future disposal facility sites based on market/demographic demands and make the locations know.
Encourage new sites with quicker permitting and funding for sites for NH trash only with recycling and composting.
State provided technical and financial assistance to create publicly-owned disposal sites

Encourage local communities to cooperate in setting new regional facilities.

North Country consolidation with other regions.

Subsidize the construction of transfer stations.

Disposal should be within 50 miles, existing mix is fairly good but at high cost and with limited life.

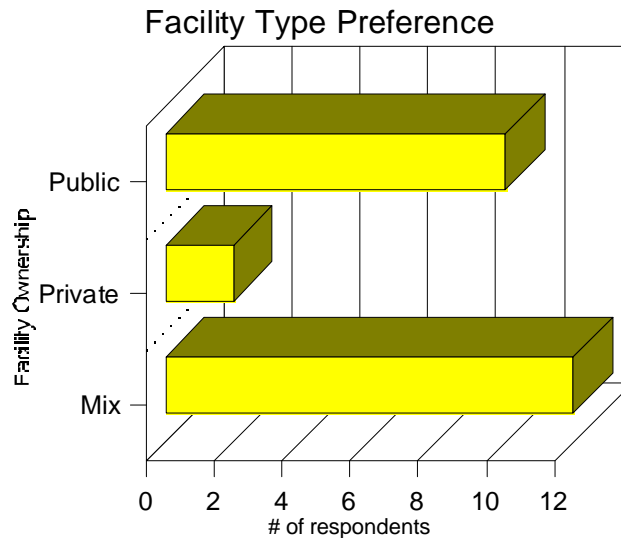
The problem is where will new capacity be?

Encourage private investment.

Discontinue focus on disposal facilities and refocus on transfer stations-linked to disposal options.

Not an issue.

5. *Currently, the disposal of New Hampshire's solid waste is accomplished by a mix of public and private facilities. Which of the scenarios listed below do you believe is best for New Hampshire?*



(source-Task Force Survey-11/16/99)

6. *Would you favor the state constructing its own facility or facilities?*

Yes (10 responses-38%)

No (10 responses-38%)

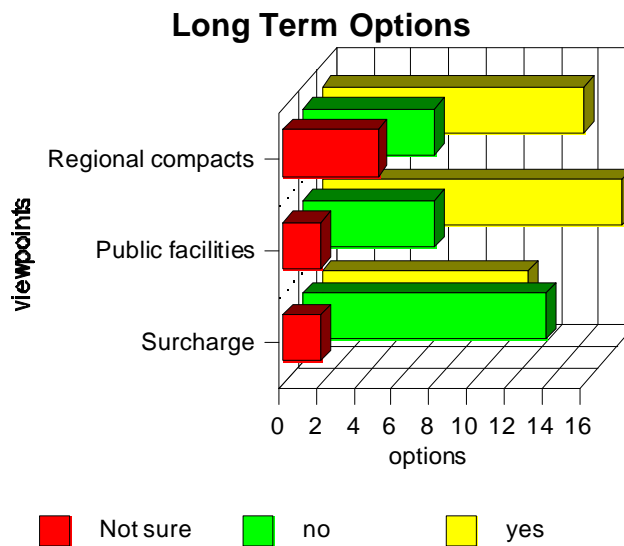
Not Sure (6 responses-23%)

7. *If you answered yes to #6, what type of facility would you support and who should operate it?*

Type of facility	State Yes/No	Regional/County Yes/No	Municipal Yes/No	Private Lease
Incinerator	7 -yes, 8-no	8-yes, 8-no	3-yes, 11-no	7-yes, 5-no
MSW landfill	10-yes, 4-no	18-yes, 2-no	7-yes, 4-no	7-yes, 3-no
Regional recycling center	6-yes, 7-no	13-yes, 2-no	11-yes, 2-no	7-yes, 2-no
C&D landfill	7-yes, 7-no	11-yes, 4-no	5-yes, 5-no	7-yes, 2-no
Special wastes e.g., industrial wastes	9-yes, 5-no	9-yes, 7-no	4-yes, 6-no	6-yes, 4-no
Household hazardous waste collection centers	7-yes, 7-no	12-yes, 3-no	11-yes, 1-no	7-yes, 3-no
Other (please specify)				
*Repair/Reuse	0-yes, 1-no	1-yes, 0-no	1-yes, 0-no	0-yes, 1-no
*State own/private oper.	1-yes, 0-no	0-no, 1-yes		

8. What do you consider long term options for addressing the importation of solid waste? New Hampshire presently receives about 700,000 tons/year of out of state waste and exports about 100,000 tons/year.

Option	Yes	No	Not sure
A surcharge sufficient to discourage waste shipment to New Hampshire (also assessed on NH waste).	11	13	2
Publicly owned disposal facilities that could limit imported waste	16	7	2
Regional compacts with other states to encourage responsible solid waste management for their own waste disposal needs	14	7	5
Other (please specify) State government should build more landfill capacity to accommodate imports and locally generated solid waste	*Increased Recycling *Recycling requirements on both instate and imports *State should build more landfill capacity for instate waste and imports		

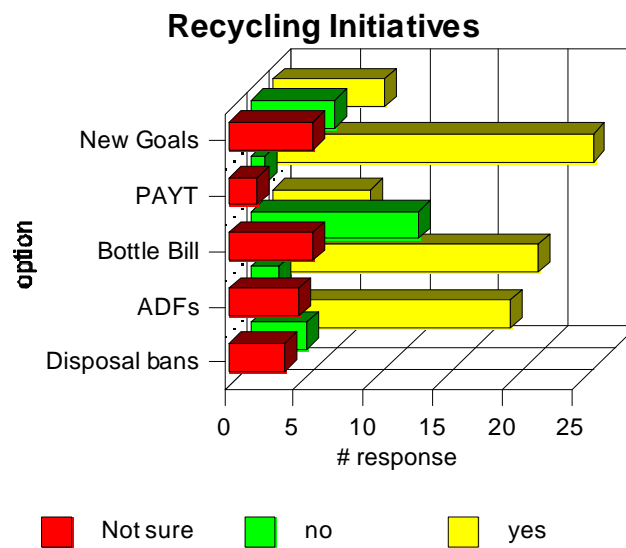


(source-Task Force Survey-11/16/99)

9. Recycling plays an important part in waste management. We are currently at about a 27% recycling rate. The legislative goal was 40% by the year 2000. It has been suggested that aggressive measures may be necessary to meet or exceed the goal. Please indicate whether you would favor the following initiatives/actions which would improve the rate.

Option	Yes		
a. Bans on disposal of certain recyclables in landfills and incinerators? (e.g. NH currently bans lead acid batteries and yard waste)	17	4	4
b. Advance disposal fees on certain items to provide for recycling activities? (e.g., NH has a similar fee on motor oil)	19	2	5
c. Beverage container redemption law (bottle bill)	7	12	6
d. Pay as You Throw Programs (pay per bag disposed)	23	1	2
e. New goals for recycling If yes, what goal should we establish? By which date?	8	6	6
	*50% w/in 5 years * 75% by 2010 * 40% by 2002 *Flexible/now *lbs/capita *40% by 2010 *reevaluate *attain goal 2000 by end of 2000		
f. Other (please specify)	*Develop more markets *Close incinerators *Municipal incentives *Education programs geared to source separation/mgmt		

10. If the answer to either 9a or 9b was Yes, which item or items should be considered?



(source-Task Force Survey-11/16/99)

a. Item(s) for which disposal bans should be implemented.

glass (7)	metal (5)
plastic (7)	newsprint (4)
cardboard (5)	mixed paper (8)
anything for which there is a market (1)	steel cans (2)
aluminum cans (3)	fluorescent lamps/bulbs (3)
beverage containers (1)	food waste (2)
brown bags (1)	HHW (1)
Core/traditional recyclables (3)	batteries (1)
electronic products (1)	mercury containing products (1)
white goods (1)	tires (1)
CRTs (1)	n/a (1)
not sure (2)	none (1)

Since we are still unable to enforce the 1997 leaf and yard waste ban, what possible good would adding more items accomplish? (1)

see Massachusetts' law (1)

b. Item(s) for which advance disposal fee should be implemented.

Conditionally Exempt Small Quantity Generator (CESQG) waste (1)	
HHW (2)	antifreeze (1)
CRTs (1)	small sealed lead-acid batteries (5)
cars (1)	mercury thermostats & devices batteries (2)
Ni-Cd batteries (1)	appliances (1)
paint (1)	household batteries (1)
mercury-containing products (2)	electronics (2)
fluorescent lamps (5)	white goods (1)
furniture (1)	consumer items such as bottles and containers (1)
plastics (1)	not sure (1)

11. Considering your answers to all of the above questions and other considerations you may wish to include, what do you envision as the best long term policy option that the state should adopt for meeting the state's disposal needs?

Keep careful track of landfill capacity and begin planning a state program of construction of regional landfills or incinerators to meet state's disposal needs.

Waste disposal is an essential government service, both legally and practically. The state must assure that there is reasonable capacity for at least 10 years. This can be accomplished by either public or private efforts (facilities) or both, as an essential service the cost should be reasonable and all in state users should have access, the state should assure air and groundwater protection and have a quick remediation program.

Identify and designate new areas for solid waste disposal.

Begin focus on 2010 and beyond, expand existing facilities, evaluate new facilities, achieve state goals for recycling.

A plan that supports aggressive source reduction and recycling to meet and exceed the state's 40% goal; a system which imposes similar source reduction and recycling standards on out-of-state entities; an industry structure which eliminates financial incentives to fill disposal capacity.

A surcharge sufficient to discourage waste shipment to NH.

Implement a surcharge with seed grant money going back to the municipalities.

Adopting a surcharge on all waste disposed of in NH and divide the money among a variety of organizations/departments to accomplish reduction of toxics, greater emphasis on source reduction and recycling, grants for recycling infrastructure, grants for innovative programs, technical support for the start up of PAYT programs, and steady reliable funding for GRP/market development.

Regional compacts with other states.

Trash management by regionalization (i.e., county) either public or private

A non-profit association should be formed to operate municipal only incinerators conveniently located to provide adequate disposal options for all regions.

Encourage pay by bag disposal, encourage recycling and recycling markets.

Encourage maximum recycling, build state of the art landfills with top end recycling, composting and re-use, only all NH trash to be landfilled in NH

Volume reduction through various programs, 1. pay per bag, 2. Reduction by incineration with power production, 3. advanced disposal fees, 4. recycling of demolition debris

Focused recycling targets (e.g., "old corrugated cardboard", metals, etc.). Forget recycling plastic.

Bans on certain recyclables disposal as with present ban on yard waste.

Enhance market, diversify landfill ownership, incineration technology, public education-change attitudes.

Aggressive recycling program, leverage public/private partnerships to achieve private sector efficiencies

Mandate recycling.

Provide competition to existing disposal facilities by building state owned and operated facilities as is being done now by other states.

Possible state sponsored landfill, closer oversight of private sector for antitrust violations

Increase competition at the private level by permitting new facilities, only add a state operated facility where it is absolutely necessary

Encourage the private sector to take more initiative.

Encourage WTE facility expansion.

NH should adopt a policy of reviewing regularly and enforcing constantly existing regulations, particularly in regard to operations of landfills and incinerators.

Increase recycling; consider regulating the waste industry as a public utility.

12. Please review the list of solid waste management activities below. List by order of preference, which should be of priority for solid waste management in New Hampshire (#1 is high priority, #6 is lesser priority).

Source Reduction	1-19	2-3	3-1	4-0	5-2	6-0
Recycling & Reuse	1-5	2-17	3-3	4-0	5-0	6-0
Compost	1-1	2-1	3-9	4-7	5-2	6-4
Landfilling	1-2	2-0	3-8	4-11	5-3	6-3
Incineration with energy recovery	1-0	2-2	3-5	4-4	5-9	6-3
Incineration without energy recovery	1-0	2-1	3-0	4-2	5-5	6-15

[Note: Not every respondent chose to include all activities in their list of priorities, and one survey was not included in the analysis due to a lack of data]

PART II

Please offer your perspective on the issue or issues which you feel are of greatest importance to the task force.

Encourage pay by bag disposal, encourage recycling and recycling markets. Provide competition to existing disposal facilities by building state owned and operated facilities as is being done now by other states.

To start to look at trash as a resource, stop the importing of trash into NH, make our representatives aware of the state trash disposal needs.

Does the state have a role in "intervening" in the market for waste disposal? If so, how? ?-supply waste disposal/mgmt services directly, ?-apply surcharge both to generate funds for waste mgmt activities + possibly reduce inflow, ?-direct regulation of private sector-e.g. as a pseudo-utility? ?- work to develop alternatives to mkt concentration, ?-let market "work its will"-these are the natural consequences of the economic and regulatory incentives prevailing and the state would only make things worse...

We are always going to have to deal with MSW. We (state and local communities) must site facilities that will serve a regional population. Perhaps 3 to 5 incinerators or landfills or a combination of the two. MSW is not going to vanish because we refuse to plan or deal with it. Lets be aggressive and make a commitment to building some large facilities that will serve the residents of NH for 30-60 years.

Long term options-regionalization by county, owned and operated, restrict disposal to residents and business's within the county, bans on disposal of recyclable items.

Prioritize the Governor's executive order, discuss and analyze the major issues of the executive order, with specific recommendations for each category, although some categories may receive less attention and recommendations than others, that will be determined by the task force input, the task force should develop a sense of an outline as soon as possible to formulate the recommendations.

NH has a strong tradition of local control and decision-making, which has included solid waste management. DES should build on this with permitting policies which encourage a dynamic mix of public and private disposal facilities. This mix does not now exist, partly due to permitting barriers in early-mid 1990's. Rational application of the "Public Benefit" provisions can address "out of state" concerns; but should not inhibit in-state local/regional disposal capacity, by either public or private sector. With a dynamic, healthy mix of capacity, local decision-making (with market forces in play) can work. Drop the waste surcharge concept. It is flawed, and does not address any of the real issues; unless it can be shown that each NH community gets back more than they pay, and can use to offset disposal costs directly, based on the income from out of state waste.

Any money generated from the surcharge needs to go to towns to enhance capacity also, some money needs to go to develop markets for recyclables

Helping DES identify the area(s) with their efforts (and our tax dollars) should be spent, new private sites, new beneficial uses (reuse) of material including incineration ASAP, write public benefit rules to encourage free enterprise to come back to NH, educate public on disposal options and recycling

The members of this task force must recognize the following: 1) solid waste disposal is regional, 2) solid waste disposal is rapidly changing-12 month old data is outdated! 3) there is direct correlation between solid waste price increases and the shift from unlined to secure disposal facilities, 4) the collection and review of accurate information is critical to this task force's success.

Many people on the task force have environmental concerns but little experience with solid waste issues. I'd like to see a continuation of presentations by the people involved in the field to bring us all up to a similar level of understanding. I don't see how the task force can address the issues we have been asked to address without this. Once we all have the basics offered from a variety of perspectives-we can decide which issues are of greater or lesser importance. Until then, we need better information.

The state needs to protect existing disposal capacity by achieving greater source reduction, meeting and exceeding the 40% recycling goal set forth by the legislature, and reducing the amount of waste imported from out of state. To satisfy these goals, it will be necessary for the state to take a more prominent role in the coordination of local efforts throughout NH and perhaps even to become a participant in the industry. The industry should be restructured in a manner that the owners/operators of disposal facilities are encouraged to make existing capacity last as long as possible rather than profiting from filling existing capacity as quickly as possible and subsequently seeking to create additional disposal capacity.

Issues of greatest importance are public policy-related; how can we leverage industry resources, efficiencies and capital to create long-term solutions? How can we use the power of public policy to ensure standards are met? How can we structure all available waste management resources to avoid lurching from crisis to crisis? How can we ensure the level and scope of services our communities demand, and at a reasonable cost?

Cost and consolidation appear to be the major issues facing solid waste disposal. Capacity will be permitted as needed whether it be to the private or public sector. Solid Waste Districts and/or county owned landfills would operate at cost for the taxpayers. A large number of smaller communities would have to work together to combine tonnages to make landfill management cost effective - the more tons the lower the cost per ton. Regionalization and cooperation between communities would be essential to attain cost savings. State owned landfills could also work but I just prefer the regional approach.

A state-wide strategy should be developed that includes consideration of: 1) impact of policies/regulations/statutes of regional states on waste stream in NH (moratoriums, construction bans, etc.); 2) evaluation of state ownership of "sensitive" facilities (i.e., regional HHW transfer facilities, ash landfills, WTE); 3) enhanced assistance programs to public and private entities for facility development and operation, regional planning, recycling/reduction program enhancements.

Appendix B

Cost Increase/Impact Task Group Report

Task Group Membership

Elizabeth Bedard, Governor's Recycling Office
Timothy Fortier, NH Business & Industry Association *
Sharon Gauthier, Androscoggin Valley Regional Refuse Disposal District
Michael McInerney, Waste Management, Inc.
Philip J. O'Brien, Ph.D., DES Waste Management Division
James Presher, Concord COOP
Carl Quiram, Town of Goffstown
H. Bernard Waugh, Jr., NH Municipal Association **
Mary Williams, NH/VT Project ***

* *Mr. Fortier joined the firm McLane, Graf, Raulerson & Middleton in June, 2000.*

** *Keith Noyes, Exeter Public Works Director, represented the NH Municipal Association.*

*** *Ms. Williams became Town Manager in Waterville Valley, NH in June, 2000.*

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Cost Increase/Impact Task Group Report

Overview

a. Core Issues

Investigate and examine recent cost increases in solid waste management and their impact on New Hampshire citizens and businesses.

b. Core Findings

Core findings listed below are not in any order of priority. It is important to note that there are social and environmental quality consequences to disposal, and to the extent you limit what is placed in landfills or incinerated, you can minimize these costs as well. Although these non-fiscal benefits to source reduction will have a different weight to different market segments, they should at least be acknowledged in this report.

1. Costs associated with solid waste management have been a major public concern over the past several years, as state and local governments and private firms have upgraded unlined landfills to state-of-the-art waste disposal facilities and dealt with a myriad of regulatory and marketplace events.
2. New federal regulations (Subtitle D) for landfill design, operation and closure decreased nationally the number of unlined dumps. In New Hampshire, the number of unlined landfills decreased from 51 to 14 during the period of 1990-1997. This regulatory event alone created economic pressures on state and regional disposal capacity and costs through the 1990's.
3. A significant marketplace event effecting solid waste disposal and management in New Hampshire is the loss of disposal capacity in the regional marketplace.
4. A significant marketplace event in New Hampshire was the April 1999 "gate rate" increase applied at most solid waste disposal facilities serving New Hampshire consumers.
5. Waste disposal costs are an affordable service to most New Hampshire consumers today. The average weighted tipping fee, including landfill and incineration, for New Hampshire in 1999 was \$63.52/ton. Average regional cost is roughly \$63/ton. Tipping fees represent "gate rate" prices for MSW disposal and other fees (long-term contracts, municipal, commercial) may be higher or lower than the gate rate price. (Source: Solid Waste Digest, 1999)
6. The average consumer knows little about the costs associated with solid waste management and disposal.
7. Negotiated, long-term contracts (municipal/contract rates) generally yield better pricing

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terms than gate, spot or commercial rates.

8. In a market-driven, quasi-unregulated economic environment, government has no control over profit or loss margins in the solid waste industry.
9. Many New Hampshire communities may be too small to exert any market pressures which may impact their ability to negotiate lower disposal costs.
10. Costs are generally higher for independent waste haulers for reasons such as a lack of long-term contracts, volume discounts, size of business, relative tons, customer base, and individual payment histories.
11. Price increases, lack of discount rates, perception of competitive disadvantages resulting from industry consolidation and vertical-integration, barriers in government regulations and importation of out-of-state waste have all placed increasing pressures on existing capacity and the state's independent waste haulers.
12. Historically, waste disposal costs across the United States and New Hampshire have fluctuated as a function of environmental regulations, including the shift from unlined to state-of-the-art disposal facilities, regional capacity reduction, pricing competition, available disposal alternatives, mandated volume reductions, and terms and conditions of negotiated contracts. Moreover, pricing is also affected by investments in capital equipment, property, highly skilled workforce, and environmental technologies.
13. The solid waste disposal industry provides a critical, affordable and essential service to New Hampshire residents and businesses on a dependable – day in and day out – basis that meets stringent environmental compliance standards.
14. Concerns from municipal officials may be underestimated at this time. A majority of municipalities may still be unaware of potential cost increases which may be better felt upon time of contract renewal. Nearly one third of municipalities have experienced a 20% or greater cost increase in the last 18 months.
15. Additional reasons behind cost increases and limited disposal options are NIMBYism, increased costs associated with litigation, and the unwillingness to deal with the fact that few individuals or few communities want disposal facilities located near them or within their borders.

c. Recommendations & Strategies

In recognition of the collective responsibility and overlapping efforts currently in place, the Waste Management Division of the New Hampshire Department of Environmental Services should convene a subcommittee to further investigate where deficiencies exist and how best to

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"fill the gaps" as well as make assignments to those parties responsible for strategy implementation.

State, municipal, solid waste districts, non-profit organizations, businesses and other members of the private sector are responsible for the successful implementation of the following recommendations, which are listed in order of priority as a result of full Task Force discussion.

1. The private sector, including commercial and industrial businesses, and public sectors, should better increase their efforts to manage waste disposal through source reduction, recycling and composting thereby reducing overall costs associated with solid waste management and disposal.
2. The "pay as you throw" concept should be considered in context of a consumer better understanding and controlling their waste disposal costs and creating an incentive to reduce their waste.
3. Advance and advocate policies and programs which promote fair solid waste disposal costs and the development of a more competitive market for reliable, cost-effective and environmentally sound waste disposal.
4. Continue to develop and disseminate available information and provide guidance to all segments of the population to ensure that they have adequate information to plan for and manage solid waste disposal costs.
5. Solid waste districts and municipalities should consider unbundling the components of waste management contracts (separate collection, transportation and disposal) as part of the bidding process in future contract renewals.
6. Continue to sponsor workshops, conferences and informational presentations targeted at solid waste districts, municipalities, and independent waste haulers. Better curriculum on in-state and out-of-state disposal options and contract negotiation skills should be directed to selectmen, town administrators, public work directors or others involved in solid waste policy or decision-making roles.
7. Improve accuracy and reporting from municipalities and adopt reporting requirements for independent waste haulers as to solid waste costs and interstate transfer of waste.
8. Continue to provide assistance in permitting of recycling facilities, measures to reduce and detoxify the waste stream and interstate transfer of waste.
9. Continue to monitor waste disposal facilities in order to more accurately project availability of future capacity and to encourage an equitable distribution and balance between in-state and out-of-state waste.

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10. The State should forge a comprehensive agreement with other New England states urging each state to be responsible for in-state solid waste generation and to better explore environmentally sound regional solutions to cost and capacity issues.
11. Municipalities and independent waste haulers should strongly consider aggregation or “buyer groups” of waste generation as an effective way to leverage volume discounts and negotiate lower rates.

I. Subcommittee Objectives

On September 15, 1999, Governor Jeanne Shaheen established a solid waste task force to analyze, among other objectives, *"...the cost increases in solid waste management and their impact on New Hampshire citizens and businesses."* (Objective #4 of Executive Order 99-6). The Executive Order also recognized that *"New Hampshire municipalities have recently experienced dramatically increased costs for the disposal of their waste and the management of their recyclables, thus placing a substantial burden on communities and businesses."*

The Cost Increase/Impacts in Solid Waste Subcommittee was formed to address these concerns and issues.

II. Cost Concerns Identified in Task Force Questionnaire

A five-page questionnaire was distributed to all task force participants on November 4, 1999. Below are cost concerns identified by task force members in these survey findings dated November 16, 1999. The issues below are not ranked in any priority order.

- Review for illegal use of monopoly power
- Closer oversight by Attorney General's Office
- Require at least three large companies to be in competition at all times
- Encourage and support more private waste haulers
- Encourage new sites with quicker permitting and funding for sites for NH trash only with recycling and composting
- Market forces and local decisions, in conjunction with a mix of permitted capacity and well written permits
- All costs will increase; public facilities might offer more control over rate/amount of increase
- Decrease the amount of waste generated and costs will drop
- Public owned capacity, acquiring and permitting a landfill site may be sufficient to drive prices down without actually opening a landfill
- Provide more competition by opening state-owned facilities in various parts of the state
- The state should monitor the availability of capacity and provide assistance to ensure available capacity

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- Encourage facility development with public resources if necessary
- Solid waste district or county owned landfills being permitted
- Introduce competition
- A public utilities-type model could be employed to ensure that disposal prices are fair, yet are at a sufficient level to make source reduction and recycling more economically advantageous
- Permit a limited number of new facilities
- Increase competition, assist independents with transfer stations
- Compare New Hampshire pricing for solid waste services to other areas of New England or New England as a whole
- The higher the cost, the more source reduction, reuse, and recycling

Other findings of the Task Force Questionnaire include:

*Overall, concern over cost increases ranked third with other major issues regarding solid waste management in New Hampshire. Future disposal capacity and industry consolidation were identified as greater concerns.

*Over 65% of Task Force participants ranked price escalation as a high concern.

III. Cost Concerns Expressed by Task Force Participants

On January 14, 2000, the full Task Force convened and ranked cost concerns in the following priority order:

- (10) Tipping fee, transfer and transportation cost increases - baselines against this industry outside of New Hampshire and other industries too
- (5) Communities lack options for disposal
- (1) Who are impacted by price increases?
- (1) Side benefits of higher cost (greater recycling)
- Hauler concerns
- Small communities problems dealing with solid waste issues
- Recycling not item for discussion
- Relationship of cost to tipping fee
- Cost of disposal currently
- Cost of recycling relative to disposal (tipping fees and other costs)
- Municipal cost comparison - solid waste versus other municipal costs
- Costs of recycling relative to scale

IV. Scope of Subcommittee Charge

The Task Force also agreed on January 14th that the three committees should work on the following leading up to the next full Task Force meeting on March 24, 2000:

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1. Focus on those top issues/problems noted above and incorporate in context to remaining issues on list.
2. Determine if the issue/problem is really a problem and for whom.
3. If a problem, develop strategies to address the problem.
4. If no consensus, clearly determine why, reasons should accompany the recommendation.
5. Integrate these findings with other subcommittee outputs.

V. Scope of Subcommittee Action

The scope of the Cost Increase/Impact Subcommittee action included:

1. Met 4 times - December 6, 1999, January 10, 2000, January 26, 2000, and March 13, 2000
2. Organized 3 survey instruments
 - (a) Municipalities
 - (b) Independent Waste Haulers
 - (c) Regional Waste Disposal Facilities
3. Organized 2 regulatory/marketplace timelines
 - (a) Chronological Summary of Regulatory and Marketplace Events - Prepared by NH DES
 - (b) Chronological Summary of Marketplace Events - Prepared by Waste Management
4. Developed position statements
 - (a) Municipalities
 - (b) Independent Waste Haulers
 - (c) Regional Waste Disposal Facilities
5. Developed strategies and recommendations

VI. Survey Findings

The subcommittee had little cost data available for review and analysis. Accordingly, the subcommittee undertook a series of surveys aimed to develop current data on waste disposal costs in New Hampshire. Three survey instruments were developed and distributed to three target groups --municipalities, independent waste haulers and regional waste disposal facilities.

There were varying degrees of success with survey response s and results. After the subcommittee had concluded its data gathering and survey analysis, it was determined that the

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overall data lacked statistical confidence to reach conclusions. Although the survey information provided good benchmarks, it was not deemed adequate for drawing conclusions.

The subcommittee requested the Waste Management Division of the New Hampshire Department of Environmental Services invest in a credible published resource for this cost information. Subsequent to subcommittee activity, the Department purchased historical cost data from Chartwell Publications in the form of the *Solid Waste Digest*. This data was determined to be more consistent, uniform, and reliable than the survey data generated by the subcommittee.

The subcommittee has provided a brief narrative on the survey findings below. Each survey instrument and a complete set of survey responses can be obtained by request from the Department of Environmental Services.

(a) Municipalities

A survey was developed and distributed to 234 towns and cities in New Hampshire by the NH Municipal Association. The subcommittee received a total of 95 complete responses, or 41%.

The survey sought to provide a historical perspective on municipal costs, or tipping fees, from 1990-2000. Year, average tipping fees, and percent of total survey responses are identified below:

Between 1990-2000, the average municipal tipping fee was \$50.47.

<u>YEAR</u>	<u>AVERAGE TIPPING FEE PER TON</u>	<u>% OF SURVEYS*</u>
1990	\$50.68	50.5%
1991	\$48.30	67.4%
1992	\$51.32	72.6%
1993	\$51.30	74.7%
1994	\$50.24	77.9%
1995	\$50.86	85.3%
1996	\$51.04	89.5%
1997	\$48.18	93.7%
1998	\$46.72	97.9%
1999	\$52.60	95.8%
2000	\$53.92	76.8%

10 YEAR AVERAGE: \$50.47

* It must be noted that nearly 53% of total surveys included the towns and cities of the Concord Regional Solid Waste/Resource Recovery Corporation (27 towns), the Androscoggin Valley Regional Refuse Disposal District (9 towns), and the NH/VT Solid Waste District (14 towns).

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(b) Independent Waste Haulers

In cooperation with the NH Motor Transport Association Waste Haulers Group, a survey was developed and distributed on February 10, 2000 to 56 independent waste haulers in New Hampshire.

The subcommittee received a total of 4 complete responses, or less than 1%. There was no follow up conducted to generate a greater response rate. As such, there is a lack of statistical confidence in this data.

The survey sought to provide a historical perspective on tipping fees for Municipal Solid Waste (MSW) and Construction & Demolition (C&D) waste, and transportation fees, from 1990-2000. Of the responses, sufficient data was available only for years 1995-2000. Information regarding average tipping fees to independent waste haulers (gate rate per ton), and hourly costs for transportation services are provided below.

<u>YEAR</u>	<u>AVERAGE TIPPING FEES/TON</u>	<u>AVERAGE HOURLY COSTS</u>
1995	\$36.00	\$50.00
1996	\$43.88	\$50.00
1997	\$58.38	\$53.33
1998	\$70.75	\$56.67
1999	\$67.75	\$61.67
2000	\$70.88	\$63.33
5 YEAR AVERAGE:	\$58.27	\$55.83

Between 1995-2000, the average gate rate subject to independent waste haulers is \$58.27, and haulers charged roughly \$55.83 per hour for transportation services during this same period. These figures do not take into consideration the size of the business, relative tons, or customer base of the hauler.

(c) Regional Waste Disposal Facilities

1. Subcommittee Survey

A survey was developed and distributed to 16 regional waste disposal facilities throughout New England by the Business and Industry Association of New Hampshire and the New Hampshire Department of Environmental Services, Waste Management Division.

The subcommittee received a total of 10 complete responses, or nearly 63%.

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The survey sought to provide a historical perspective on regional disposal facilities prices from 1990-2003. Years 2001-2003 were excluded for lack of sufficient data. Year and price for gate rates, municipal rates, contract rates and commercial rates are identified below.

<u>YEAR</u>	<u>GATE*</u>	<u>MUNICIPAL*</u>	<u>CONTRACT*</u>	<u>COMMERCIAL*</u>
1990	\$52.00	\$52.93	\$38.67	\$52.67
1991	\$52.00	\$53.63	\$42.21	\$52.33
1992	\$52.00	\$45.82	\$41.12	\$45.25
1993	\$52.00	\$47.95	\$40.49	\$44.87
1994	\$52.17	\$50.18	\$44.71	\$46.22
1995	\$52.17	\$49.97	\$48.82	\$49.58
1996	\$52.17	\$51.08	\$43.12	\$49.10
1997	\$52.50	\$52.32	\$39.82	\$50.15
1998	\$58.00	\$52.73	\$39.76	\$51.60
1999	\$71.38	\$59.05	\$43.54	\$57.50
AVE:	\$56.43	\$52.38	\$42.42	\$51.99

** Gate rate includes non-contract/spot; municipal rates are contracts with cities and towns; contract rates are contracts with independent haulers; and commercial rates are direct business agreements with waste generators.*

Between 1990-2000, the average gate fee charged by regional disposal facilities was \$56.43; the average municipal fee was \$53.38; the average contract fee was \$42.42; and the average commercial fee was \$51.99.

The average gate fee from 1990-1995 was \$52.05, and \$61.67 from 1996-2000, an increase of 15.6%.

The average municipal fee from 1990-1995 was \$50.08, and \$55.14 from 1996-2000, an increase of 9.1%.

The average contract fee from 1990-1995 was \$48.48, and \$42.12 from 1996-2000, a decrease of less than 1%.

The average commercial fee from 1990-1995 was \$42.90, and \$56.20 from 1996-2000, an increase of 23.6%.

2. State and Regional Tipping Fees

The Subcommittee explored published data regarding regional and national tipping fees. Data evidenced a wide variability between states and regions and comparability was difficult to ascertain.

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According to credible published data (Chartwell Publications), *Solid Waste Digest* sets New Hampshire's total weighted average (including landfill and incineration) tipping fee in 1999 at \$63.52. *Solid Waste Digest* sets the regional average (including New Hampshire, Maine, Vermont, Massachusetts, Connecticut, Pennsylvania, New Jersey, New York and Rhode Island) for landfill and incineration at \$63 per ton in 1999. Further analysis of this cost information is contained in a previous section of this report.

VII. Position Statements of Public & Private Interests

The Subcommittee asked representatives of municipalities, independent waste haulers, and regional waste disposal facilities to provide their perspective on cost increases and impacts. These position statements have been slightly modified to better reflect the consensus of the Subcommittee.

(a) Municipalities

Concern from town and city officials may be undervalued at this point. A vast majority of NH municipalities may still be unaware of the cost increases associated with waste management and disposal. As these contracts expire and bid responses are initiated, the concern over cost increases may not be over, in fact, may just be starting.

Another concern expressed by municipal officials is the perceived lack of disposal options. The lack of competitive choices, or knowledge of available options, appears to hinder a town's capability to hold the line on solid waste costs. Moreover, the average New Hampshire community is too small to assert any market force that could better leverage their disposal options and overall costs.

(b) Independent Waste Haulers

Price increases, lack of discount rates, and perceived competitive disadvantages resulting from industry consolidation and vertical-integration, barriers in government regulations and importation of out-of-state waste have all placed increasing pressures on existing disposal capacity and the state's independent waste haulers.

The state's haulers have indicated that they are forced to "look outside" New Hampshire for disposal and recycling options to remain competitive. Haulers believe doing business in New Hampshire places them at a competitive disadvantage since they are faced with disproportionately higher gate rates and a perceived lack of service at these corporately owned solid waste disposal facilities.

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(c) Regional Waste Disposal Facilities

The solid waste disposal industry provides a critical and essential service to New Hampshire residents and businesses on a dependable basis -- day in and day out -- and in a manner that meets stringent environment compliance standards. Nevertheless, waste disposal continues to be one of the most affordable services available to New Hampshire residents today. It is estimated that residents pay on average the same for waste disposal services as they might for telephone or cable television services.

Historically, waste disposal costs across the United States have fluctuated as a function of environmental regulations, including the shift from unlined to state-of-the-art disposal facilities, regional capacity reduction, pricing competition, available disposal alternatives, mandated volume reductions, and terms and conditions of negotiated contracts.

In addition, pricing is affected by significant investments in capital equipment, property, highly skilled employees, environmental technologies, and overall environmental and regulatory compliance.

Appendix C

Disposal Capacity Task Group Report

Task Group Membership

William Gallagher, Town of Cornish
Preston Gilbert, North Country Council*
John LeCraw, Waste Management Council
The Honorable George Musler
Philip O'Brien, NH Department of Environmental Services
Michael Samson, Northeast Resource Recovery Association (Chair)
William Straub, Consulting Engineers of New Hampshire
Michael Walls, Esq., NH Department of Justice
A. Carl Weatherbee, Town of Peterborough
Julian Zelazny, Audubon Society of New Hampshire

** Dan Woods replaced Preston Gilbert when Mr. Gilbert moved out of state.*

Appendix C

Disposal Capacity Task Group Report

April 21, 2000

The Task Group explored issues related to the availability of disposal capacity for the citizens and businesses of New Hampshire.

Topics Discussed

The core issues discussed by the Task Group were the following:

1. What are the capacity needs of the State of New Hampshire currently and over the next ten years?
2. What is the present availability of capacity available to the residents and businesses of New Hampshire?
3. What are the guarantees that capacity will be available in the future?
4. For how long a period should New Hampshire be assured of the availability of capacity?
5. What is the cost of the capacity currently?
6. What are the guarantees that the costs will remain the same over time?

Based on the discussion of the above topics, there was further consideration of the following two topics:

1. Is there sufficient capacity available and dedicated to New Hampshire for a minimum of 7 years? It is the belief of the Sub-Committee that seven years represents the minimum time needed to site, design and build a new landfill.
2. Are there sufficient strategies in place to assure that capacity remains competitively priced? Capacity that is otherwise available may not be effectively available if the cost is prohibitive.

Information Received

There is currently sufficient capacity available to the State of New Hampshire. There are private, public and mixed facilities that are providing this capacity. The largest participants providing capacity include the NH-VT Solid Waste Project, the Concord Coop, the City of Nashua, City of Lebanon, Town of Conway, Casella Waste Management through North Country Environmental and the KTI waste to energy facilities and Waste Management, Inc. through the Wheelabrator plants and Turnkey Landfill.

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The finite limits of the landfill capacity are less clear. It is not known how much un-permitted and undeveloped capacity is available at the Turnkey and North Country landfills as no permits have been filed for development of all of the site, but it appears that there is considerable acreage available to both companies for potential development. The future capacity of the merchant facilities of Waste Management and Casella Waste Management is at risk to some extent. Either or both companies could choose to increase the importation of waste and accelerate the development of the sites thus reducing potential long term (in excess of 10 years) capacity that would be available. The State of New Hampshire currently requires the presence of some reserve landfill capacity that would be available to the State of New Hampshire under current Public Benefit legislation.

There is substantial capacity available beyond the borders of New Hampshire. At many out of state facilities, tipping fees are much lower than gate prices charged in New Hampshire. Looking at these facilities and their rates, it becomes clear that transport cost must be factored into the cost of disposal for waste going out of state. In computing economics, the Sub-Committee assumed that transport cost was \$1.25 a mile round trip resulting in a shipping cost of 6 cents a ton per mile. In addition, where transport was done through an intermediate transfer station of economic size (25,000 tpy minimum), it was assumed that there would be handling cost of \$2 a ton. As an example, if there were a landfill with a tipping fee of \$35 a ton located 400 miles from Concord, the total cost would be \$35 tipping fee plus \$2 handling charge plus \$48 shipping cost for a total of \$85 per ton.

The Sub-Committee noted that both Casella Waste Management and Waste Management, Inc. advised commercial and municipal accounts early in 1999 that rate increases were going into effect. The proposed rates were as high as \$65 a ton from Casella to \$80 a ton for Waste Management, Inc. (without transportation). Subsequent to these announcements, new contracts have been negotiated that are both as high as the stated new price and lower than the \$65 and \$80 tipping fees initially quoted. A number of municipalities are operating under pre-existing contracts that are yet to come up for renewal or re-bid. In a recent survey of rates, Waste Management, Inc. has stated that they intend to offer an average municipal rate of \$50 a ton for waste disposed of at their Turnkey Landfill in Rochester, New Hampshire.

Conclusions

- ❑ There is currently sufficient disposal capacity.
- ❑ There should be reserve capacity of at least 7 years permitted to receive 1.2 million tons of waste a year or a total of 8.4 million tons of capacity over 7 years.
- ❑ There is the potential that this reserve could disappear quickly if the landfill facilities were developed more rapidly, a decision within the control of primarily private companies.
- ❑ The market price of disposal rests almost exclusively with the private sector, as there are virtually no public facilities in New Hampshire offering statewide merchant disposal capacity.

Appendix D

Industry Concentration Task Group Report

Task Group Membership*

John Casella, Casella Waste Systems, Inc.
John M. Halstead, University of New Hampshire (Chair)
The Honorable David Hess, New Hampshire Legislature
Tom Irwin/Nancy Girard, Conservation Law Foundation
Walter Maroney, NH Department of Justice**
Barry Normandeau, Normandeau Trucking
Philip O'Brien, NH Department of Environmental Services
The Honorable Betsey Patten, New Hampshire Legislature
G. Bradley Richards, Chair, NH Waste Management Council
The Honorable Richard Russman, New Hampshire Legislature
Marghie Seymour, New Hampshire the Beautiful

** Additional research support on the legislative history section of this report was provided by Ms. Laura Scott, Graduate Research Assistant, Department of Political Science, University of New Hampshire.*

***Walter Maroney left the Attorney General's Office in June 2001 to enter private practice.*

1. Introduction

The concentration of the solid waste collection and disposal industries in the United States in recent years has resulted in a relatively small number of firms controlling a large percentage of the total market. This concentration, which shows all indication of continuing, has been viewed with concern by local communities, waste haulers, and others in the waste management field. In addition, the issue of importation of substantial quantities of out of state waste is viewed as a problem by some.

This report of the sub-committee on changes in industry structure of the New Hampshire Solid Waste Task Force addresses some of these issues in four principal sections. The first section provides an overview of the factors that lead to market concentration, followed by a specific discussion of the waste industry in New Hampshire. The second section discusses current, pending, and attempted legislative efforts to affect waste management. The third section discusses the possibility of construction of publicly owned capacity to increase competition and provide other potential benefits. The fourth section discusses the use of surcharges both to discourage waste creation and imports and to raise revenue.

2. General Issues of Market Structure and Concentration

How Do We Measure Market “Concentration”?

When does a market become “uncompetitive”? It is sometimes difficult to say, but there are two major measures of industry concentration: the four firm concentration ratio and the Herfindahl-Hirschman index (HHI). The four firm concentration ratio is simply the percentage of industry sales by its four largest firms. The HHI is a bit more complicated; it can range in value from very low numbers for a highly competitive industry to 10,000 for a monopoly. The size of this index is often what piques the Department of Justice’s interest, and may lead to investigation of firms within an industry. The Department of Commerce does not generally maintain a HHI for the solid waste industry; when antitrust actions are being considered, the Department of Justice compiles its own HHI for a region using what essentially amounts to subpoena power (“Civil Investigative Demands”) to obtain firm-level sales data.

How Does Concentration Occur?

One might assume that most industries were at one time at least somewhat competitive. Other than a single firm expanding to the point where it dominated the industry, concentration usually occurs via merger. There are three basic types of merger: horizontal, which applies to combinations of firms within the same industry (illegal when the merger is likely to reduce competition substantially); vertical, which occurs when firms acquire other firms which supply inputs or use their outputs; and conglomerate, which involves combinations of seemingly unrelated businesses.

Industry concentration is usually discussed in terms of negative effects, but there may also be positive outcomes. Possible negative impacts include “excessive profits,” undersupply of

services, higher prices, and lack of consumer choices, while positive impacts might accrue because bigger may actually be better, i.e., cheaper, and because innovation and technological change may spring from large corporations.

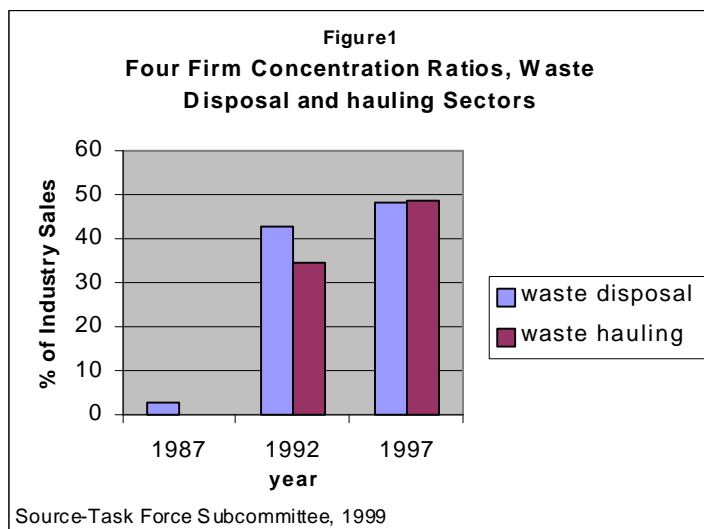
Antitrust Considerations

While market concentration is viewed as a fact of life, our government sees one of its roles as promoting competition in the market place; hence the U.S. Department of Justice Antitrust Division. This division oversees markets, scrutinizes mergers, and is supposed to penalize those who engage in “unfair trade practices.”

While there a number of pieces of legislation relating to antitrust, several stand out. In 1890, Ohio Senator Sherman’s actions led to passage of the Sherman Antitrust Act which declared that “every person who shall monopolize, or attempt to monopolize...any part of the trade or commerce among the several states...shall be deemed guilty of a felony...” The Clayton Act (1914) outlawed tying contracts, banned interlocking directorates, and banned mergers via acquiring common stock--but primarily only if these practices lessened competition. The Federal Trade Commission, established in 1914, prohibits “unfair methods of competition.”

In antitrust, there are two main issues, conduct and structure. Conduct offenses include predatory pricing (selling below cost to drive out competitors), retail price maintenance, price discrimination, and tying contacts. Size and structure cases are more problematic. In recent years, the so-called “rule of reason” has dominated: that is, “to be illegal an action must be unreasonable in a competitive sense and the anticompetitive effects must be demonstrated” (Boyes and Melvin, p. 684, 1999).

The Waste Industry--Disposal and Hauling



All of this discussion sets the stage for an examination of the waste industry. It should be stressed that to truly determine the competitiveness of the waste industry, one must closely examine the region in question and should be careful in using only national figures. However, national figures can shed some light on overall trends.

The waste industry has come to be dominated by relatively few firms in the past two decades. The

four firm concentration ratio for SIC 4953 (Refuse systems) in 1992 was 42.6 (the top four firms accounted for \$6,012,630,000 of total industry revenues of \$14,101,667,000). This compares with a ratio of about 2.9 in 1987 (\$112,639,000 of \$3,763,768,000)(see Figure 1). The same trends apply to garbage and trash collection (SIC 4212), where the top four firms accounted for \$3,794,184,000 of \$10,984,763,000 or 34.5 percent of total revenues in 1992. The more recent 1997 census data show slightly increased concentration in the disposal sector, with the top four firms accounting for about 48 percent of industry sales, and a considerable increase in concentration in the hauling sector from 34.5 to 48.4 percent (these estimates are derived using the NAICS codes which replaced the SIC codes in the latest census). Anderson (2000) projects that privately held haulers will account for just 2 percent of the overall market by 2005, down from 23 percent in 1997.

Why is this concentration occurring? Economic theory and empirical research point towards several logical explanations:

- Economies of Scale--There is evidence of economies of scale in landfilling, some evidence in waste to energy, less evidence in hauling/collection.
- Control of Essential/Unique Resource --While geologically there are a large number of landfill sites, political constraints and issues such as the NIMBY make existing landfills seem as unique as mineral deposits.
- Financial Barriers--Regulatory actions, such as RCRA Subtitle D and other legislation geared toward protecting the environment, have increased costs substantially.
- Lack of Substitutes--In spite of increased recycling and some success in source reduction, there still are few substitutes for waste disposal. Empirical estimates show demand for waste disposal to be highly price inelastic.

In addition, there may also be “hidden” barriers to entry which skirt the edge of legality. For example, Anderson (2000: 26-27) speculates that the power acquired via vertical integration of hauling and disposal operations makes it extremely difficult for new competitors to break into the system:

When it comes time to off-load...the erstwhile competitor will have to queue at one of the cartel's landfills. There he will be susceptible to price squeezes by being overcharged, sent for a very long wait at the scale house or have his loads given a “white glove” inspection, and turned away for containing proscribed material.

New Hampshire Issues

While the national data indicate that concentration in the waste management industry is increasing dramatically, the situation is even more striking in some individual states. A quick review of economic census data for New Hampshire indicates that there are 13 firms involved in waste management and disposal (NAICS Code 5622), accounting for receipts of over \$45 million annually (US DOC, 1997); however, the industry is even more concentrated than this relatively small number of firms would indicate. For example, two firms account for more than 80 percent of available capacity in Maine, Vermont, New Hampshire, and much of Massachusetts

(Maroney, 1999). While transfer station control is also highly concentrated, the waste collection sector still includes many small, independent haulers. Kirkpatrick and Broadwell (1999) note that merger and acquisition activity in the recycling industry has been vigorous over the past several years.

In New Hampshire, as elsewhere in the northeastern United States, significant governmental, social, political, and economic factors have limited establishment of new capacity. The U.S. Constitution's Commerce Clause (discussed below) limits capacity management, while state and local moratoria put further pressure on existing capacity. The combination of these factors has led both to the consolidation of market power and the state's status as a major importer of MSW. In addition, there is concern that the large scale importation of waste from other states may eventually pose a capacity problem for the state's own waste (an issue addressed by a different sub-committee); also, a reputation as a "dumping ground" or the promotion of waste disposal as an economic opportunity (a la tourism) probably are not strategies the state would want to pursue. Other potential problems, which have may be caused by importation, include adverse effects on tourism, increased demands on transportation infrastructure, and possible impacts on environmental quality and aesthetics.

Potential Antitrust Responses

The consolidation within the disposal site market within the solid waste industry over the last decade may be viewed as an appropriate market response to several factors, including environmental compliance costs, which have imposed significant increases in the technological and capital costs basis of the disposal industry. Nevertheless, the simple fact that the disposal site market in New Hampshire and in the northeast United States has increasingly become dominated by a relatively few major companies inevitably raises the issue of whether the surviving dominant firms possess market power, or exhibit market behavior which could be characterized as problematic under antitrust laws.

Thus, in New Hampshire, two disposal firms, Casella and Waste Management, Inc. control approximately 80% of the available landfill disposal capacity, and a significant percentage of transfer station capacity. The costs and social obstacles to expansion of landfill capacity dictate that a significant increase in New Hampshire capacity (or capacity available to New Hampshire) is unlikely over the next few decades (see New Hampshire Department of Environmental Services, SOLID WASTE REPORT TO THE LEGISLATURE, 1998, at 9, 11). Thus, absent purchase of existing capacity by a new entrant into the market, these percentages are likely to remain static into the foreseeable future, and to increase over time as capacity is exhausted.

Accordingly, the potential for exploitation of market power by the dominant firms is an unavoidable component of analysis of the solid waste industry. Such potential exploitation could take one or both of two primary forms: monopolistic pricing of access to capacity through tipping fees; and the extension of the dominant firms "horizontal" market power over capacity to other market segments, including in particular, the waste hauling sector.

Recent market trends indicate that there are, or may be, grounds for continuing inquiry into each of these possible forms of market exploitation. Tipping fee increases at sites owned by dominant firms during 1999 were widely criticized by waste producers and haulers as potentially excessive under current market conditions. Similarly, purchases of independent hauling companies by dominant site owners has markedly increased concentration within the hauling trade and raised questions about the propriety of permitting those firms to establish market power within that segment of the industry.

Clearly, the dominant position assumed by the major site owners with respect to New Hampshire landfill capacity has invested those companies with significant market power and the capacity to use that market power to effect further changes in the price structure and concentration levels of the solid waste industry in this state. It is beyond the scope of this report to assess whether, or to what extent, the actions of these firms may be consistent or inconsistent with antitrust law. Moreover, it is evident that the actions of the dominant firms take place in a complex and interdependent environment in which pricing and industry concentration are also subject to factors as disparate as environmental policy, importation rates and recycling rates, and the cost structure of the hauling industry (which itself is dependent on variables such as the cost of diesel fuel).

Nevertheless, it is our view that state policy regarding solid waste must be framed in a manner which effectively analyzes the use by the dominant landfill disposal owners of the market power conferred on them during the last decade and promotes rational and responsible business conduct by those firms.

3. Legislative Issues

Historical Overview of Solid Waste Legislation

Article I, Section 8 of the U.S. Constitution lists the powers that are given to Congress. One of the powers granted to Congress states that "The Congress shall have Power...to regulate commerce with foreign nations, and among the several States, and with the Indian Tribes." This grant of power, known as the Commerce Clause, contains no language that explicitly limits a state's interference with interstate commerce. To prevent unfettered interference with interstate commerce by state governments, the Supreme Court developed a doctrine known as the "dormant Commerce Clause." The dormant Commerce Clause, a judicially created doctrine, has been used by the courts to strike down state legislation in conflict with national commerce policies, and is often evoked by the courts in instances when states unduly infringe upon interstate commerce.

Waste importation bans usually take the form of a state or local statute that either prohibits or restricts the importation of out-of-state wastes for the purpose of protecting in-state landfill capacity. The following are examples of court rulings at the federal and state level that deal with states attempting to limit or halt the importation of trash into their landfills from out-of-state generators.

Court Rulings

In 1978, the Supreme Court struck down a New Jersey statute that prohibited the disposal of out-of-state waste in New Jersey landfills in *City of Philadelphia v. New Jersey*, 437 U.S. 617 (1978). In this case, there were two issues of contention: whether the interstate movement of waste consists of "commerce" within the meaning of the Commerce Clause, and whether the New Jersey state law limiting interstate transport of waste is an economic protectionist measure or a law directed at legitimate local concerns that has only small effects on interstate commerce. In response to the issue of whether the interstate movement of waste consists of commerce, the Court held that "all objects of interstate trade merit Commerce Clause protections; none is excluded" (*City of Philadelphia v. New Jersey*, 622). The Supreme Court held that the statute placed an impermissible restriction on interstate commerce, and was therefore in violation of the dormant Commerce Clause. The court said that a state may not try to isolate itself from a common problem by prohibiting importation of items of commerce simply because those items originate outside its borders.

After the ruling in the *City of Philadelphia* case, state legislators went to great lengths to draft complex statutes invented to avoid violating the Commerce Clause. States where such statutory attempts have failed judicial scrutiny include Indiana, Alabama, Ohio and South Carolina (Ewel 37). Indiana, concerned about the amount of out-of-state waste coming over its borders, passed a law in 1990 aimed at controlling the importation of trash from other states. The concern, proponents of the law said, was that residents' health could be endangered by the garbage, which sometimes contained infectious medical wastes (Dieter 4A). Officials sought to require out-of-state haulers to obtain certification from a health officer in their state that the shipment did not contain hazardous or infectious wastes. They also attempted to require the hauler to specify where the largest part of the shipment originated. The law sought to increase the disposal fee on out-of-state trash to the amount that would have been charged at the landfill nearest the point of origin. The constitutionality of the law was immediately challenged and the U.S. District Court, on December 27, 1990, ruled the law unconstitutional.

The ruling by the District Court judge included some guidelines that suggested ways Indiana could craft a law that might withstand a constitutional challenge. The judge ruled that the state could impose stringent regulations of infectious or hazardous waste, but only if in-state and out-of-state shipments are treated the same. As well, the ruling left open the possibility of establishing a flat-rate tipping fee that is higher for out-of-state dumpers than in-state ones, based on the notion that out-of-state dumpers should pay their "fair share" of the state's costs to regulate landfills. "After all, in-state dumpers — like all Indiana citizens — pay taxes to support the Department of Environmental Management," he said (Dieter 4A).

On June 1, 1992, the Supreme Court announced its decisions for two more cases dealing with the question of trash importation: *Fort Gratiot Sanitary Landfill, Inc v. Michigan Dept. of Natural Resources*, 504 U.S. 353 (1992) and *Chemical Waste Management, Inc. v. Guy Hunt, Governor of Alabama*, 504 U.S. 334 (1992). In the *Fort Gratiot* case, the Supreme Court struck down Michigan's solid waste management law that prohibited private landfills from accepting solid waste originating outside the county in which the landfill was located. This banning of out-of-county waste was part of Michigan's comprehensive solid waste management act designed

to fit federal guidelines. The court found this provision unambiguously discriminated against interstate commerce and that Michigan provided no legitimate health or safety reason why a facility should be able to accept waste from inside the county but not from outside the county (Luton 132). The Fort Gratiot case is significant because the Court held that local governments were subject to the same standards in relation to the dormant Commerce Clause that state governments were.

In the *Chemical Waste Management, Inc. v. Guy Hunt, Governor of Alabama*, 504 U.S. 334 (1992) decision, the Supreme Court struck down an Alabama statute that levied a special fee on out-of-state hazardous waste disposed of in Alabama. The Alabama law imposed a fee on hazardous waste disposed of in-state, but the fee was higher if the hazardous wastes were generated outside of the state and then brought into the state. The Court held that the differential treatment of out-of-state waste violates the Commerce Clause of the Constitution. Several conclusions might be drawn from the 1992 Supreme Court case decisions in *Fort Gratiot* and *Hunt*:

- The dormant Commerce Clause prohibits states from advancing their commercial interests by curtailing the movement of articles of commerce either into or out of the state.
- Solid waste is a commodity in interstate commerce whether or not it has any inherent value.
- A state statute that clearly discriminates against interstate commerce is clearly unconstitutional unless the discrimination is demonstrably justified by a valid factor unrelated to economic protectionism.
- It is immaterial that the discrimination was by county rather than by state.
- Discriminatory measures, even if motivated by good intentions, are no less susceptible to the charge of economic protectionism.
- Once it has been shown that a statute discriminates against interstate commerce, the state bears the burden of demonstrating that the statute furthers local health and safety concerns that cannot be adequately served by non-discriminatory alternatives. (Ewel 37)

In a case presenting a slightly different twist, *Gilliam County v. Department of Environmental Quality*, 849 Pacific Reporter, 2nd 500 (1993), the Oregon Supreme Court ruled that a statute authorizing higher fees for disposal of out-of-state waste did not on its face violate the Commerce Clause. The surcharge was authorized as a means for concerning specific costs incurred in regulating out-of-state waste. The U.S. Supreme Court, in April 1994, reversed the Oregon Supreme Court's decision (*Oregon Waste Systems, Inc. v. Department of Environmental Quality of the State of Oregon*, 114 Sup. Ct. 38, combined with *Columbia Resource Company v. Environmental Quality Commission of the State of Oregon*, cases no. 93-70 and 93-108). The court found Oregon's surcharge for disposing out-of-state waste "discriminatory on its face" (Luton 132). Since it was discriminatory, the surcharge could only be allowed if it advanced a legitimate state purpose that could not be served through an approach less discriminatory. Oregon's attempt to portray the surcharge as a compensatory tax and its argument that "Oregon citizens should not be required to bear the costs of disposing out-of-state waste" were not convincing. Justice Thomas said that the effect of the surcharge was to have out-of-state shippers pay the full costs while in-state shippers paid less than the full cost (Luton 133).

Oregon's argument that they were engaging not in economic but in resource protectionism, landfill space, was rejected as an attempt to isolate itself from a problem common to all states.

In 1990, a Wisconsin recycling law was passed by the legislature restricting which items could be landfilled in Wisconsin by requiring out-of-state waste haulers to sort waste in the same way Wisconsin's handlers were required to sort waste. The waste haulers and others sued, charging a violation of the interstate commerce clause, because the law imposed a restraint on trade across state lines. They won when, in 1995, the Seventh Circuit of the U.S. Court of Appeals struck down Wisconsin's statute on the grounds that (1) it applied to all waste originating in out-of-state jurisdictions, regardless of whether it was bound for Wisconsin, (2) it required out-of-state communities to enact ordinances favoring Wisconsin's recycling system, and therefore had extraterritorial application, (3) it created the possibility of balkanization among the states (in the event other states enacted similar statutes), and (4) it made interstate commerce in waste more costly than intrastate commerce in that commodity. Each of these problems, the Court held, caused the statute to violate the dormant Commerce Clause of the U.S. Constitution.

In 1997, the Wisconsin Legislature passed a new law intended to fix the problems with the overturned law. According to the new law, the Legislature again required that out-of-state waste could be disposed in Wisconsin only if the community where the waste originated adopted an ordinance incorporating the mandatory components of Wisconsin's recycling program. This time, however, the Legislature permitted out-of-state communities to differentiate between waste bound for Wisconsin (which was required to be recycled in accordance with a Wisconsin-approved program) and waste bound for other states (which could be processed in any manner). Following another challenge, the Seventh Circuit Court of Appeals declared Wisconsin's new statute unconstitutional, finding that, although it attempted to resolve the first of the four problems cited in the Court's 1995 decision, it still suffered from problems two, three and four. Significantly, the Court stated that "the Constitution permits [Wisconsin] to require imported wastes to be processed in order to curtail the burden on landfills." *National Solid Wastes Management Assoc. v. Meyer*, 165 F.3d 1151 (7th Cir. 1999). However, because Wisconsin's Legislature could not properly require communities in other states to process their wastes pursuant to a particular, Wisconsin-approved ordinance, the statute was struck down.

Commerce Clause Exceptions

Exceptions to the dormant commerce clause may be recognized under certain circumstances. First, however, it is necessary to determine whether any prohibition or restriction discriminates against out of state interests either facially, in its practical effect, or in its purpose. Thus, even when a statute does not facially discriminate against out of state interest, it is still examined in light of its practical effect or purpose. Therefore, it must be determined whether the proposed prohibition operates in a discriminatory manner against out of state interests. (Virginia Attorney General's Office, 1998)

There are three generally accepted exceptions to the scope of the dormant Commerce Clause. First, under the quarantine exception, courts have long recognized that states have the power to

ban the import of a commodity for health or other concerns in the absence of non-discriminatory alternatives. Second, where a state or locality has entered the market as a participant, the dormant Commerce Clause does not affect what would otherwise be impermissible restrictions on interstate commerce. The third exception holds that a state statute that erects a barrier to interstate commerce may nonetheless be upheld if the statute was enacted pursuant to Congressional authorization. Where state or local governmental action is specifically authorized by Congress, the action is not subject to the Commerce Clause even if it interferes with interstate commerce (Ewel 37).

Current and Pending Federal Legislation on Interstate Waste and Flow Control

The information that follows on federal legislation is, as it must be, work in progress but is current nonetheless. Copies of the bills referred to below can be accessed via the Library of Congress which is found on the Web at www.loc.gov (click on "Thomas"). What follows was derived from a review of the bills and a discussion with Senate Environment & Public Works (EPW) Committee staff.

The EPW Committee (Senator Smith, Chairman) held a hearing June 17, 1999 to receive testimony on S 533 (Robb-Warner), S 663 (Specter), and S 872 (Voinovich). S 533 is legislation growing out of the Virginia-New York dispute and addresses waste importation, not flow control. However, S 663 and S 872 are broader bills that include both interstate waste bans and flow control.

House bills on these issues include: HR 378, a bill to authorize States to regulate certain solid waste, introduced by Rep. Gillmore on January 19, 1999; and HR 1190, Solid Waste Interstate Transportation and Local Authority Act of 1999, introduced by Rep. Greenwood on March 18, 1999. Both bills have been referred to the House Commerce Committee. No action has been taken to resolve the differences between the Senate bills or between the House and Senate Bills.

Generally, the Senate bills restrict the movement of waste in interstate commerce. They all contain a presumptive ban on shipments of municipal solid waste for disposal in other states and allow states to freeze imports at a specified base year level. These provisions have implications for New York and the closure of the Fresh Kills landfill (which currently accepts approximately 13,000 tons of waste per day) in 2001. In addition, S 663 and S 872 grant authority over waste imports to local governments through host community agreements and S 533 provides authority to ban imports or charge fees of up to \$100 per ton on waste that comes from "super-exporting states." A super exporter is one which exports 1,000,000 tons per year (tpy) or more, which is only New York at this point. S 663 and S 872 also allow for the denial of a permit to new or modified landfills or incinerators if there is no local or regional need for the facility in the state. S 663 and S 872 provide for a restoration of flow control authority to facilities that exercised such authority prior to the Supreme Court's *Carbone* decision in May 1994. Flow control permits local governments or states to require that waste generated within the jurisdiction be disposed of at a specific facility.

Legislative Discussion

Federal court decisions have tended to restrict state and local government control over solid waste when their actions have interfered with interstate commerce, as we have seen. The executive and legislative branches of the federal government have given the responsibility for developing and implementing solid waste management plans to state and local governments, but those same governments have been told by the judicial branch that they do not have the authority to control some elements (i.e., importation) they may consider essential to effectively implement those plans. The attempt of the federal judiciary to create a level playing field for in-state and out-of-state producers and disposal companies is generally logical on traditional legal grounds. From a policy perspective, however, it may tie the hands of local and state public administrators to implement effective and efficient waste policies.

Recognizing that waste disposal is now a regional and, in some cases, national rather than local issue, the sub-committee feels that it is important to encourage cooperation, coordination, and consultation at all levels. To this end, two general actions might be considered:

- That the New Hampshire U.S. Congressional Delegation be encouraged to consider legislation which would permit the State of New Hampshire more flexibility and authority in managing solid waste imports. A draft of a Joint Resolution of the New Hampshire legislature proposed by Senator Russman is included in Appendix B.
- That the Governor of New Hampshire should issue a joint statement with the other regional governors which affirms the intent of the states to treat waste management as a regional problem, and pledges cooperation between the states to that end.

Finally, it may be possible, given the recent Wisconsin case, that certain carefully crafted state-level legislation may pass constitutional muster. Thus, it may be appropriate to consider state legislation other than symmetric surcharges to help manage the import issue. For example, HB 1417, as proposed in the 2000 NH Legislative Session, would phase in a prohibition on the disposal/incineration of certain products in the waste stream; the approach set forth by HB 1417 presumably would apply to out-of-state generators as well as in-state generators, and would therefore provide an option for affecting the level of trash importation.

4. Building Public Capacity

One measure which has been suggested which could potentially reduce costs to New Hampshire municipalities and introduce more competition would be to provide additional publicly owned and/or run disposal capacity. As with all “solutions” to the disposal problem, this, too, has its pros and cons.

Effects on Imports

Building, or otherwise increasing, publicly owned waste disposal capacity would do nothing to address the level of waste crossing New Hampshire's borders for disposal in the state. In all likelihood, New Hampshire waste diverted to publicly owned disposal facilities from its current disposal sites would simply free up that capacity to be marketed as a still-attractive destination for out-of-state waste. This would occur primarily for two reasons:

- Existing disposal assets justify and service their significant capital commitments by seeking to be fully and efficiently utilized. They would seek to replace the lost waste (and revenue) streams as a matter of economics.
- The regional disposal market, particularly outside New Hampshire, remains underserved. Waste would seek suddenly-available New Hampshire capacity as a matter of economics.

So it is likely that, while developing more capacity in New Hampshire may serve several goals, stemming the tide of incoming non-New Hampshire waste is not one of them. Nonetheless, public facilities could legally exclude imports, and possibly lead to extended capacity in the state. In addition, achieving specific overall goals such as source reduction could be a provision for using public facilities.

Effects on Costs

Building, or otherwise increasing, publicly owned waste disposal capacity may have the desired effects of reducing the per unit price of waste disposal. For this to occur, more capacity (having been built and added to existing capacity) would chase a fixed volume of waste (assuming that cheaper disposal costs would not actually increase waste generation). There is, however, a difference between price and cost. Disposal capacity has high fixed costs, particularly capital. These costs are amortized over waste volume, e.g., higher volume, lower per unit costs; lower volume, higher per unit costs. This phenomenon is related to the economies of scale issue discussed in section 2.

Since the volume often required to amortize a capital intensive landfill has become politically unpalatable, it is possible, then, that publicly financed and built capacity reserved for New Hampshire's municipalities could, by policy choice or market economics operate on lower volumes and higher per unit costs. In effect, disposal capacity would require a subsidy from New Hampshire's taxpayers, which creates the equation:

$$\text{Per Unit Price} + \text{Taxpayer Subsidy} = \text{Disposal Cost}$$

Currently, one might argue the equation looks like this:

$$\text{Per Unit Price} = \text{Disposal Cost}$$

Given the economics of solid waste, it is arguable that these two sums (Costs) are identical, or nearly so. The only variable is the taxpayer subsidy, which may represent an unnecessary cost or risk of public money, or both. In other words, publicly owned disposal capacity does not necessarily guarantee lower costs, and involves some fiscal and market risks. However, if a

surcharge is enacted, revenues could be used to provide this subsidy, so that the cost of the subsidy would be borne by out-of-state generators. While this still would mean that cost to society might be greater for this option, cost to New Hampshire could be lower.

On the other hand, public and private facilities come from quite different perspectives regarding definition of costs. While the private sector will build some return on investment into their cost structure, the public sector may not. This introduces the distinction between accounting costs--which include only those tangible costs such as land acquisition, permitting, construction, daily cover, etc.--and economic costs, which build in the aforementioned return on investment. Thus, two questions arise:

- First, should public capacity factor in some type of return on investment? After all, funds invested in landfill construction would have an opportunity cost, as they could be used for education, road construction, tax relief, or a variety of other needs.
- Second, what is a “fair” return on investment? One must acknowledge that private sector “prices” are not necessarily equivalent to “costs” as conventionally defined, but more to “cost plus” return. A certificate of deposit will yield a return of 4-5 percent; the stock market traditionally returns in excess of 10 percent return over the long run; what is “fair” return over accounting costs for the waste management (or any other) sector? Unfortunately, this is a highly subjective issue which will not be resolved here.

Effects on Competition

Publicly owned capacity, by creating a somewhat more level “playing field” on disposal costs for all service providers, may have the effect of softening the competitive landscape in New Hampshire. This public policy goal would have to be weighed against the effects of the potential costs discussed above: the possibility of greater amounts of imported waste, and the additional burden placed on New Hampshire’s taxpayers.

5. Surcharges

In light of changes within the solid waste industry, including the consolidation of disposal facilities, accelerating disposal costs, and the increase over the past 5 years in imports for disposal within New Hampshire’s boundaries resulting in decreased future capacity for New Hampshire’s own waste, it is recognized by the subcommittee that a surcharge on waste could be of benefit to New Hampshire. Surcharge legislation, properly written, could have beneficial results in several areas and could assist New Hampshire communities in reaching waste reduction goals by helping to fund both local and state-level recycling programs. In the absence of other funding, surcharge monies could additionally help to reduce the toxicity of the waste stream.

Surcharges have been imposed by numerous other states as funding mechanisms for various programs. New Hampshire currently has an out-of-state surcharge clause on the books (RSA 149-M:7, XI) but has discontinued it due to expected conflicts with existing interstate commerce laws. Further difficulties in imposing a surcharge could arise from the prohibition on unfunded mandates contained in part 1, Article 28-A of the state constitution.

A surcharge could be crafted in any number of ways. This subcommittee recognizes that, without careful consideration of the possible impacts of such legislation, a surcharge could have detrimental effects on New Hampshire that could outweigh any positive results. Therefore, before recommending a surcharge, the following points need to be addressed.

- Specific waste reduction goals based on a decrease in per-capita waste disposal must be set and the expenditure of surcharge monies must contribute toward achievement of those goals.
- Monies generated through a surcharge should be earmarked for programs that effect a reduction of waste generated within the state, and an increase in the reuse and recycling of those portions of the waste stream suitable for those activities.
- Should a portion of the fund be used to address the issue of reducing the toxicity of the waste stream?
- Should surcharge monies go to a dedicated fund that cannot be diverted to other programs?
- Should distribution of surcharge monies take into consideration NH's existing network of recycling organizations? Clearly, monies must be distributed in such a way as to minimize duplication of services, encourage cooperation and communication among organizations, and maximize the effectiveness of currently existing programs.

In order to respond to concerns of opponents to a surcharge, consensus building must be undertaken and must take into consideration the following.

- New Hampshire municipalities are more likely to support a surcharge if they receive back an amount at least equal to the amount they paid in.
- NH municipalities are more likely to support a surcharge if there is a clear and distinct outline of where and how the funds will be spent and if the distribution of those funds clearly addresses the needs of the communities.
- Existing recycling organizations are more likely to support a surcharge if the distribution of the funds complements or increases existing successful programs, and builds on the strengths of those organizations.
- Including a public capacity building component in the use of surcharge money could result in opposition from communities that have already funded their own disposal capacity, e.g., Concord Coop, City of Nashua, Town of Conway, Vermont/NH Project.
- Including a revolving loan fund for the express purpose of assisting towns or groups of towns in the development of publicly held disposal capacity could help remove some financial barriers to developing public capacity without asking other communities to pay for it.
- Commercial and industrial wastes comprise a substantial component of the total waste disposed of in NH and programs funded by a surcharge should address commercial reduction and recycling in addition to municipal programs.

Finally, it must be considered that although an increase in the cost for solid waste disposal could be a greater incentive to recycle and reduce waste volume, that effect would probably be minimal from a relatively small surcharge. On the other hand, a relatively small surcharge is less likely to generate strong opposition. Even relatively small surcharges may be sufficient to shift

the waste flow within the region and could negatively impact individual areas and businesses within the State.

6. Discussion

Through this report, this sub-committee has principally examined the state of the solid waste industry both nationally and in New Hampshire, focusing on how current conditions arose. To a lesser extent, the report examines possible mechanisms for affecting the structure of the industry. The primary issues of affecting waste importation and enhancing competition within the industry were viewed as key to the sub-committee's charge. With guidance from the SWTF, the principal issues addressed were:

- factors which lead to concentration in markets in general, and the solid waste industry in particular;
- legislative avenues by which states could gain more control over waste crossing their borders from other states;
- the role of the public sector in providing capacity for state communities; and
- the potential for surcharges as a means of either affecting waste flows or generating revenues.

With regard to these principal issues, the sub-committee has the following general comments: Industry concentration has been increasing in the waste disposal sector, and will likely increase further in the absence of extra-market action. New Hampshire currently has in recent years had approximately a seven-to-one ratio of waste imports to exports; however, recent industry-state cooperation has shown potential of reducing this ratio substantially (Waste Management, 2000). Actions in other states have exacerbated the problem of importation. While there may be issues of behavior or structure which warrant examination from an antitrust angle, these are beyond the charge or the ability of this subcommittee to address. It is possible that a public-utility type approach based on "natural monopoly" or anti-competitive arguments could be considered an option (see e.g. Ackerman, 1992). In any case, the NH Attorney General's office is currently exploring these issues.

Further, the sub-committee recommends that the SWTF consider these recommendations.

1. The impact of waste imports is proportionally as important to New Hampshire as it is to larger states. The Committee recommends that the New Hampshire Congressional Delegation be committed to empowering states to manage the import of waste and, particularly, to empower small states.
2. It is recommended that consideration be given to the following issues as possible means of affecting either imports or costs:
 - a. Provision of public capacity which may have the potential to increase competition, and decrease costs at the local level. However, the true (full) costs of disposal should be recognized and publicized.

- b. Application of a surcharge which may be a means of affecting flows and raising revenue for the diversion and detoxification of the waste stream. A surcharge system must make every effort to address the concerns of all New Hampshire stakeholders.
- c. Development of state-sponsored legislation that evenly applies a requirement to meet certain reduction/recycling rates to both in- and out-of-state waste destined for disposal in New Hampshire.

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Appendix E

Summary of Regulatory and Marketplace Changes 1981-2000

(source: NH Department of Environmental Services, Waste Management Division)

TABLE NO.1

(prepared Fall, 1999)

Chronological Summary of Regulatory and Marketplace Events that Impacted Solid Waste Disposal in the State of New Hampshire

EVENT	DATE/IMPACT PERIOD (Circa)	COMMENTS
1. State Solid Waste Statute (RSA 149-L –1981)	1981	This was the first state solid waste statute aimed at solid waste management. Enforcement was by the Dept. of Health. Repealed 1982 and consolidated under RSA 149-M.
2. State Solid Waste Districts (RSA 149-L –1982)	1982	This was the first state law aimed at forming solid waste districts between towns to take advantage of the cost and resource savings of regionalizing solid waste management.
3. State Solid Waste Rules (Amended 1983, 1984, 1987,1988, 1990)	1983	These were the first state solid waste rules. The 1983 and 1984 rules were general in nature, requiring solid waste management facilities to be “state-of-the-art”. The rules ushered in the “modern era” of solid waste management regulation, especially for incinerators and landfills.
4. Federal RCRA (1976) (HSWA Amendments-1984)	1984	The 1984 HSWA amendments included a provision to deregulate certain MSW incinerator ash as a hazardous waste, increasing the amount of ash that would be handled as a solid waste rather than a hazardous waste. On May 2, 1994 the U.S. Supreme Court eliminated this exemption.
5. State Solid Waste Statute Amendment (RSA 149-M:10, V-b, Laws of 1986)	1986	This statute amendment added a requirement for publicly and privately owned solid waste facilities to provide “financial assurance” in an amount necessary to protect public health and the environment.
6. Federal CERCLA (Superfund)/NCP-SARA Amendments.	1986	These federal statute amendments increased the number of Superfund Site cleanups and increased the amount of waste disposed of off-site. Non-hazardous components included commercial and industrial solid waste and asbestos.

EVENT	DATE/IMPACT PERIOD (Circa)	COMMENTS															
7. State Solid Waste Plan (1)	1988	<p>This plan was one of the first comprehensive efforts to define and plan for solid waste management in the state. The estimated population and generation rates at that time:</p> <table> <tr> <th><u>Year</u></th><th><u>Population</u></th><th><u>Solid Waste Generation, TPY</u></th></tr> <tr> <td>1986</td><td>1,027,052</td><td>949,572 TPY</td></tr> <tr> <td>1990</td><td>1,147,382</td><td>1,055,708 TPY</td></tr> <tr> <td>2000</td><td>1,439,486</td><td>1,311,992 TPY</td></tr> <tr> <td>2010</td><td>1,753,147</td><td>1,588,101 TPY</td></tr> </table>	<u>Year</u>	<u>Population</u>	<u>Solid Waste Generation, TPY</u>	1986	1,027,052	949,572 TPY	1990	1,147,382	1,055,708 TPY	2000	1,439,486	1,311,992 TPY	2010	1,753,147	1,588,101 TPY
<u>Year</u>	<u>Population</u>	<u>Solid Waste Generation, TPY</u>															
1986	1,027,052	949,572 TPY															
1990	1,147,382	1,055,708 TPY															
2000	1,439,486	1,311,992 TPY															
2010	1,753,147	1,588,101 TPY															
8. State Solid Waste Operator Certification Program	1990	This program represents the beginning of the state requirement to train and certify the operators of all solid waste management facilities in the state. To date, approximately 1,800 operators have been certified. New Hampshire is one of only several states to have an operator certification program.															
9. Federal National Emission Standards for Hazardous Air Pollutants (NESHAPS). (40 CFR 61, Subpart M)	1990	These federal rules imposed more stringent disposal, management and record-keeping requirements on the landfilling of asbestos wastes.															
10. Federal DOD/Installation Restoration Program (IRP) and Redevelopment of the Pease AFB; Closing of Pease Regional Solid Waste Incinerator	1988-1991	The closing of the Portsmouth (Pease) Regional Solid Waste Incinerator resulted in the need to rely on commercial facilities for disposal of solid waste from the cooperative regional communities (ME & NH) and Pease AFB. In addition, Pease AFB redevelopment produced more solid waste (C&D, asbestos) that also required off-site disposal at commercial facilities. Portsmouth and the Pease Redevelopment Authority continue to generate additional solid waste as redevelopment continues.															
11. Federal Air Quality NSPS/EG for Large MSW Incinerators	1991	These federal rules introduced more stringent air regulations for MSW incinerator emissions, resulting in the need for additional air pollution controls.															
12. State Hazardous Waste Rules	1991, 1994 & 1996	The State Hazardous Waste Rules have had a minimal effect on solid waste generation and disposal in New Hampshire. The Hazardous Waste Rules provide more stringent definitions of certain hazardous waste, moving certain former solid wastes into hazardous waste management facilities (e.g., corrosive solids).															

EVENT	DATE/IMPACT PERIOD (Circa)	COMMENTS
13. State Solid Waste Rules (Re-adoption and amendment)	1991	The 1991 state rules specifically established and delineated the “state-of-the-art” requirements for solid waste facilities, including landfills, in order to protect the public health and water and air resources. An increased level of incinerator ash testing and management was also included in the new rules. Other related state air pollution and groundwater protection rules were being modified/developed to meet the new state (and federal) landfill rules.
14. Federal Solid Waste Landfill Regulations (40CFR258)	1991	These rules imposed more stringent federal requirements for solid waste landfill facilities, including a future cost avoidance incentive for closing early to avoid federal monitoring and financial assurance requirements. Thirteen (13) unlined New Hampshire landfills chose to close early (i.e., prior to 1991) and subsequently converted to off-site commercial disposal.
15. Federal Air Quality NSPS/ EG for MSW Landfill Gas	1991	These rules imposed more stringent requirements for solid waste landfill gas management.
16. State Solid Waste Statute Amendment (RSA-149-M)	1993	This state amendment imposed a statutory ban on the disposal of yard and leaf waste at state landfills. This provision preserved some of disposal capacity of the existing landfills in the state.
17. State Landfill Closure Grant Program/State SRF Loan Program	1995	The State Landfill Closure Grant Program provides a 20% grant program while the SRF Program provides low interest loans for the closure of unlined (old) solid waste landfills. The requirements of the new state and federal landfill rules plus the incentive of time sensitive financial support has resulted in the closure of 70 landfills to date (1999).
18. Federal Air Quality NSPS for Large MSW Incinerators	1995	These federal rules provided more stringent requirements for the Wheelabrator Resource Recovery Incinerator serving the Concord Regional Solid Waste Cooperative, which resulted in the need for additional air pollution controls.
19. State Solid Waste Rules	1997	The state solid waste rules were amended to include new provisions for the granting of permit exemptions and the formal adoption of the federal landfill requirements in 40 CFR 258, as well as updating existing facility standards to provide greater efficiency.
20. Federal Air Quality NSPS for Medical (HMIWI) Incinerators	1998	These federal rules imposed more stringent air quality requirements for the incineration of medical waste (hospital, medical and infectious waste).

EVENT	DATE/IMPACT PERIOD (Circa)	COMMENTS
21. PROPOSED Federal Air Quality NSPS for Small Incinerators. (>35 TPD)	1999	When adopted, these rules impose more stringent federal air quality requirements for small incinerators.
22. State Incinerator Closure Grant Program. (HB 294) (Adopted 11/99, Effective 1/00)	2000	These amendments will add a 20% grant program for the closure of publicly owned incinerators in the state similar to the landfill closure grant program already in existence. The overall effect of this program will be to add an additional incentive to close old publicly-owned incinerators. It should be noted that the result of more stringent air quality and ash testing and management requirements, as well as the emergence of more cost-effective alternatives to incineration, has been to discontinue the use of incineration in New Hampshire. For example, of the eighteen (18) publicly owned incinerators operating in 1990, only eight (8) are still operating while eleven (11) have already closed. In addition of the eight remaining, both Bridgewater and Nottingham are scheduled to close in the near future. Those publicly owned incinerators which have closed since 1990 are: Auburn, Canterbury, Durham, Lamprey COOP (UNH), Lincoln, Pittsfield, Plymouth, Portsmouth, Windham, and Wolfeboro. Those remaining public incinerators still remaining in operation are: Bridgewater, Candia, Litchfield, Nottingham, Ossipee, Pelham, Sutton and Wilton.

(1)- There were two solid waste management plans written before 1988. One was a 1972 document entitled “Solid Waste Management Plan” written by the Division of Public Health, Bureau of Food and Chemistry. The other plan was dated July 1981 and entitled “Solid Waste Management Plan for New Hampshire” prepared by the Office of State Planning, Ron Poltak, Director. Although these plans broadly addressed the topic of solid waste management, it wasn’t until the formation of the NHDES in 1987 that a comprehensive plan could be prepared and implemented with the assistance of a unified environmental agency.